An Oration
ON
ABDOMINAL SECTION FOR THE TREATMENT OF INTRA-PERITONEAL INJURY.

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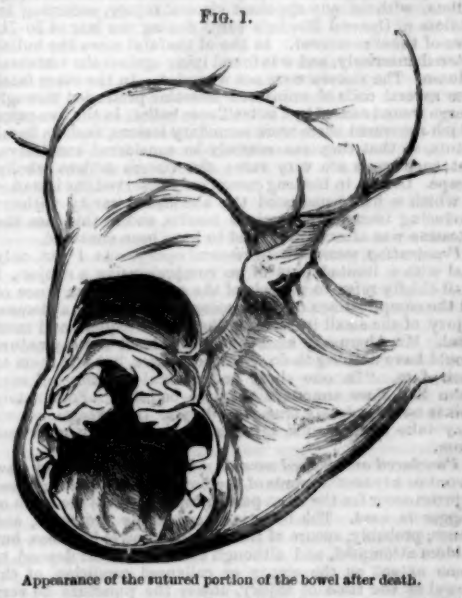
MR. PRESIDENT AND GENTLEMEN,—The subject of abdominal surgery is so wide that it may be said to possess a literature of its own. The condition of the kidneys, intestine, stomach, uterus, and spleen, which indicates surgical intervention has been very fully considered, and lately diseased states of the pancreas and liver. There is one class of cases, however, which has received less consideration than the rest—at any rate, in the light of our newer knowledge and experience,—and that is the treatment of penetrating abdominal wounds and visceral injury. My attention has been directed to the subject by the recent occurrence in my own practice of two cases of intra-peritoneal rupture of the bladder produced by external violence. In both of these the abdominal cavity was laid freely open, the rent in the bladder closed by suture, and the peritoneal cavity effectively purified. In each instance the patient completely recovered, and two men, the subjects of a heretofore fatal injury, were restored to perfect health. Another case of the same kind has been since successfully operated upon in a precisely similar manner by Mr. Walsham at St. Bartholomew's Hospital. My colleague, Mr. Croft, has courteously placed at my disposal the record of a case which, if not in itself completely successful, points out how success is to be realised. It is so interesting that I shall give a brief account of it.

G. W——, aged thirty-four, labourer, was admitted into St. Thomas's Hospital on Sunday, March 6th, at 2 o'clock. Seventeen hours previously he had received an injury to the abdomen in a public-house row. He stated that he had been jumped upon. He had no medical advice before reaching the hospital. During the night he was in great pain and was sick two or three times. On admission the patient's temperature was 103°, and he was thought to have peritonitis. Mr. Croft was sent for. He decided at once to explore the abdomen by median laparotomy. The operation was performed eighteen hours and a half after the accident. Three lesions were discovered. The ileum had been ruptured tranversely to the extent of two-thirds of its circumference at the junction of the lower and middle thirds. The lower surface of the mesentery in the same neighbourhood presented a laceration about an inch and a half in diameter, and the omentum, above the level of the umbilicus, had a considerable rent in it. There was fæcal extravasation, and septic peritonitis had spread into the iliac, umbilical, and hypogastric regions. Enteroraphy was debated, but postponed under the circumstances in favour of artificial anus. The peritoneum was very carefully irrigated and rendered aseptic with a warm solution of boracic acid from 15 to 20 per cent. in strength. The edges of the ruptured intestine were closely attached to the parietal wound, and the rest of the incision closed in the usual manner. The operation lasted an hour and a half, and the man was kept during this time under the influence of ether. He became much exhausted. The pulse was very feeble and the hands and feet cold. He recovered satisfactorily. The symptoms of peritonitis disappeared, but a sharp attack of bronchitis ensued. This yielded to treatment, but he did not gain strength or flesh, partly by the irrepressible escape of intestinal contents at the artificial anus and partly by the local irritation established in the abdominal wall by the contact of the intestinal secretion. At the end of four weeks Mr. Croft proceeded to close the artificial anus. The patient was prepared for the operation, which was performed on April 4th by substituting rectal feeding for alimentation by the mouth, and by local irrigation of the intestine and all parts immediately concerned. The bowel was then separated from its parietal attachments, the injured portion resected, and the cut surfaces carefully united by twenty-six sutures of fine silk; twenty of these were in one row, after Lembert's manner of suturing. The operation lasted two hours and a quarter, and the patient was taking ether all that time, with the exception of a quarter of an hour, when his circulation was so feeble that the anæsthetic was discontinued and a brandy enema was administered. The patient died on April 5th, thirteen hours after the operation. The lungs were found very congested and airless. The suturing had been perfect, and the peritoneum was entirely free of any recent exudation or inflammatory products. (Fig. 1.) Had the natural force of the man been a little greater he might have made a good recovery.

Mr. MacKellar, in a case of gunshot injury of the sigmoid flexure, recently opened the abdominal cavity, but found it impracticable to apply Lembert's suture to the intestinal perforations caused by the bullet. The patient was in a state of impending collapse at the time of the operation, and died twelve hours afterwards.

Again, Mr. Croft nearly achieved success in a case of rupture of the spleen. The patient, a young man, had been run over by a cab, but no effective assistance was rendered to him, and when brought to the hospital twelve hours afterwards the abdominal cavity was full of blood. Laparotomy was performed and the ruptured spleen removed, the peritoneal cavity being cleared of blood and purified; but the patient never rallied from the state of collapse and died the same evening.

FIG. 1.



Appearance of the sutured portion of the bowel after death.

Cases such as these are somewhat closely connected. They suggest many points of interest, and invite consideration to the large question of abdominal injury, more especially in regard to its treatment by operation. I would urge the propriety of a more frequent resort to abdominal section and exploration of the abdominal cavity and contents than has been heretofore adopted in cases of injury in—1. Incised and punctured wounds of the abdomen implicating the intestine or other viscera. 2. Abdominal gunshot wounds, chiefly as they affect the intestine. 3. Traumatic rupture of the intestine and viscera without external wound.

Stab wounds of the abdomen.—These may be either simple penetrating wounds without injury to any of the contained viscera, or accompanied by visceral injury. Simple penetrating wounds of the abdominal cavity are very rarely inflicted either by sharp or blunt weapons or by gunshot. There are upon record many apparent exceptions to this

statement, but some of them may be explained by the circumstance that the weapon or projectile has evaded the abdominal cavity which it apparently enters, or when traversing the cavity has produced an injury susceptible of repair. A sword thrust may traverse the abdomen, and the bowel, subsequently prolapsed through the wound, be found uninjured. During the American war an Apache Indian prisoner, attempting to escape, was transfixed by a bayonet and pinned with it to the ground. The weapon entered the left hypochondrium, passed directly backwards, and made its exit about two inches from the vertebral column. No bad symptom followed, and the wound had healed on the fourth day. An instance is recorded where an iron-headed arrow entered three inches to the right of the fifth lumbar spine and emerged two inches to the right by the ensiform cartilage. Circumscribed peritonitis ensued, but the patient recovered without other ill consequences. Hennen records the recovery of a soldier shot through the abdomen with a ramrod at Badajos in 1812. During the American war in 1863 a ramrod entered the left groin of Private Manypenny and emerged through the left lumbar region. The surgeon records his diagnosis as "a ramrod driven plump through the guts." There was no serious peritonitis, and the man returned to duty two months later. Beck quotes seven cases of penetration of the abdomen by bullets, without any apparent visceral injury, occurring in soldiers of General Werder's corps during the war of 70-71. Five of these recovered. In one of the fatal cases the bullet entered anteriorly, and was found lying against the vertebral column. The viscera were not wounded. In the other fatal case several coils of uninjured intestine protruded through a large wound caused by a mitrailleuse bullet. In the five cases which recovered there were secondary lesions, such as fæcal fistula, so that they can scarcely be considered conclusive. But such cases are very rare; the viscera seldom wholly escape. Larrey, in his long career, only observed one instance in which a ball penetrated the abdominal cavity without producing immediately serious results, and in this case the intestine was afterwards found to have been contused.

Penetrating wounds, with visceral injury.—As I can only deal with a limited part of so comprehensive a subject, I shall chiefly refer to wounds of the small intestine, since of all the complications of penetrating wounds of the abdomen, injury of the small intestine is the most frequent and most fatal. Mr. Abernethy used to shake his head and say nature would have nothing to do with these cases, but left them to their fate. "In one short and general prognostic," says John Bell, "we announce them to be fatal." Fortunately this is not absolutely true, but despite the exceptions, we may take it that such injuries are very rarely recovered from.

Punctured and incised wounds.—In time of war very few sword or bayonet wounds of the bowel are met with; these injuries occur for the most part in brawls, where the knife or dagger is used. The intestine very rarely protrudes, and hence, probably, suture of the wounded bowel has been but seldom attempted, and although the result must depend to some extent on the empty or collapsed condition of the bowel at the time of injury, unless the puncture be very small, there is no likelihood of recovery without suture. When extravasation occurs, peritonitis almost necessarily follows, although in a few instances a fortunate agglutination of adjacent coils may prevent it and recovery ensue.

Diagnosis.—The diagnosis of wound of the bowel is of primary importance, as upon the speedy determination of this point and prompt consequent action must almost altogether depend the success of our treatment. When the injured intestine is prolapsed through the wound, or the contents of the tube escape externally, the diagnosis is clear; but these occurrences are the exception, and the presence of a wound of the intestine in the early stage must be often mere matter for conjecture. Tympanites and discharge of blood per anum are valuable symptoms when present, but neither may appear directly after the injury. If the blood passed from the bowel be abundant and shows itself soon after the injury, it is a very valuable symptom. Emphysema, when it occurs in the wound neighbourhood, is said to be pathognomic. Shock and pain vary so much in degree as to afford no useful guidance. The amount of shock is very variable, and cannot be relied upon in any degree as diagnostic. It is often described as very trifling; at other times it may be severe. The amount of pain also offers no true criterion. The surgeon who sees the case immediately after the injury must often be in doubt as to whether the intestine be injured or not, and as to the extent of the internal damage. Probing these wounds has been very universally condemned as useless for diagnostic purposes, and harmful to the sufferer, by possibly disturbing the parts and giving rise to fæcal effusion. But this view can scarcely meet with the same consideration now in the light of modern means of treatment. If precautions be taken to exclude septic influences, the thorough examination of the wound by the probe may determine its direction and extent, and if this fail to clearly establish the fact or otherwise of penetration, the wound should be enlarged and explored to its termination, either in the parietes or more deeply. The important point to speedily determine is whether the wound penetrates the abdominal cavity, and this is perhaps the most effective manner of ascertaining it. After a short interval the occurrence of peritonitis will determine our diagnosis; tympanitic distension of the abdomen, agonising pain, ceaseless vomiting, tendency to collapse, thready pulse, and clammy surface make their appearance, and a fatal issue soon follows. When the diagnosis has been established in this way the services of the surgeon are no longer called for. Should the abdominal cavity be penetrated, the question arises as to whether the intestine has been wounded or hæmorrhage has taken place. In that event, the better treatment will be at once to make a median incision in the manner recommended for any other form of abdominal section, and not to trust to enlargement of the existing wound. Of course where the bowel protrudes and no extravasation has taken place in the interior, it will be sufficient to suture the opening in the prolapsed portion, excise after ligature any damaged portion of omentum, and return the parts, if necessary enlarging the external wound for the purpose.

Treatment.—Although the abdominal cavity has been traversed both by a bullet and sword without opening the intestine, which is presumably thrust aside, this condition of things is not to be relied upon to guide our treatment.

Enteroraphy is at the present time admittedly the best method of treatment for all punctured and incised wounds attended by protrusion, unless the parts are so damaged that an artificial anus seems preferable. In cases of stabs and gunshot wound unattended by protrusion, the common practice heretofore has been to arrest the peristaltic movements with opium and enjoin absolute rest, in the hope that adhesions may form to avert extravasation. Experience proves that in the vast majority of instances such hopes are illusory; ninety-nine times in a hundred extravasation occurs, hyper-acute peritonitis follows, and after much suffering death usually takes place within forty-eight hours.

Another practice commonly recommended is the formation of an artificial anus by attaching the margins of the wound in the gut to the skin; but where it is possible to avoid it this course is in the highest degree undesirable, and certainly unnecessary in those cases where the injury does not extend more than half-way around the calibre of the tube, or where the convexity of the bowel is wounded; probably also in all cases where the mesenteric attachment is intact; and the same may be said where the bowel is ruptured by external violence. This practice gives the surgeon a false sense of security; he thinks if his sutures give way the patient may still recover, but the evidence is very strong that the risk of fæcal extravasation is less when the wound in the bowel is completely closed and the gut at once returned to the abdominal cavity. A different practice properly obtains where the bowel is gangrenous in hernial or other forms of strangulation. An artificial anus should then be established in preference to immediate resection of the gangrenous portion of bowel with suture of the divided ends. In such cases the bowel is in an unhealthy condition. We do not exactly know the limits of the gangrenous action or of the zone of inflammatory infiltration beyond it, and therefore cannot precisely determine what amount of damaged bowel it is necessary to remove. In cases of injury, however, we shall have but half accomplished our work if we do not at once attempt to restore the continuity of the intestine. Should the patient recover, a further operation will be required to close the fæcal fistula, and this procedure is often one of great difficulty and serious risk. Besides, should the original damage be in the upper portion of the small intestine, there is a considerable probability of the individual being either starved or so weakened by the escape of nutriment that he becomes unfit to be submitted successfully to any operation whatever.

Intestinal suture.—There are three conditions required to ensure successful suture of the intestine. 1. Two adequately

broad and sufficiently wide surfaces of peritoneum must be brought into contact. 2. The mucous membrane must be excluded, for when the needle passes through the whole thickness of the gut peritonitis generally ensues from leakage taking place along the line of the thread. 3. Rapidity of execution is of extreme importance, and that form of suture is the best which can be effectively applied in the shortest time.

In 1826 Lembert introduced a method of bringing the two adjacent serous surfaces into contact, avoiding penetration of the mucous coat. It is the preferable one to employ in all wounds of the bowel. Sufficient inversion may be thus easily accomplished without causing obstruction of the lumen of the tube. When the wound is small or incised, the needle may be introduced a line and a half or two lines from the margin and then brought out at the edge of the serous coat, the same being done on the opposite side. This will suffice in clean-cut wounds, but where the edges are bruised it is best to exclude them by entering the needle about three or three and a half lines from the margin, and carrying the suture through the bowel a line distant or more from the edge. The number of stitches must be sufficient to bring the parts everywhere into accurate contact, and care taken not to tie the sutures too tightly, as it may lead to gangrene and consequent failure to procure union. Experimentally this has been found to be the most frequent cause of non-union. The ends of the sutures are cut short and the intestine returned to the abdominal cavity. When drawn together sufficiently to bring the surfaces fairly into contact, the subsequent swelling will hold the parts firmly until the rapidly formed adhesive material securely glues them together. When the omentum is much injured it is probably best to excise the damaged parts after ligature.

The abdominal cavity must be perfectly cleansed of all blood and foreign matter. Irrigation with a 3 per cent. solution of boric acid at a temperature of 100°, made with water previously boiled, is the best and gentlest method. The external wound is closed as after ovariotomy. If the operation be done shortly after the accident drainage may be dispensed with. If some time have elapsed, or if peritoneal inflammation be present, it will be best to drain. The presence of a drainage-tube in the wound certainly enhances the risk run by the patient, and it is best, therefore, to dispense with it in all cases where it appears safe to do so.

Gunshot wounds.—Gunshot wounds of the intestine are injuries of the most fatal description. They are of frequent occurrence in time of war, and far from being rare in civil practice, especially in America, where everyone carries a revolver and often uses it on small provocation. About one-tenth of those slain in battle perish from abdominal injury, but only 3 or 4 per cent. of those who come under treatment are wounded in the abdomen. These wounds are almost invariably concealed, the gut being seldom protruded. Wounds of the duodenum are comparatively rare, and usually associated with other severe injury. The jejunum is more frequently wounded; but the ileum is the most frequent seat of gunshot injury; damage to other parts is generally present, or a multiple wound of the intestine itself. Alexander relates a case occurring in the Crimea where the intestine was wounded in sixteen places by the same bullet. If this were common operative surgery would prove of little avail; but seldom more than two convolutions are perforated, or the intestine wounded in more than four places. In a few instances the bullet may perforate and lodge in the bowel; this is proved by its being voided at stool shortly after, and this happens most frequently in wounds of the large intestine. When discharged per anum at an early period, the bullet has presumably penetrated the gut; when the missile is passed at a late period it probably gained admission to the tube from some adjacent part by secondary ulceration or abscess.

Symptoms and diagnosis.—In gunshot injuries the first question to ascertain is if the bullet have penetrated the abdominal cavity. The external wound should be carefully probed, or it may be enlarged sufficiently to explore its whole length as it passes through the abdominal wall. This adds little to the gravity of the patient's condition, and will positively determine whether the wound is a penetrating one. These injuries are attended with considerable hæmorrhage, great and prolonged shock, lowered temperature, feeble rapid pulse, restlessness, severe pain, great anxiety, and rectal tenesmus, and there is always extravasation of fæces into the peritoneal cavity, although it is very rare for any sign of them to appear externally. The absence of fæcal matter in the parietal wound is no proof that the intestine is not perforated. In none of Professor Parkes' numerous experiments on dogs did any fæcal matter emerge through the external wound, although in many instances large quantities were found in the peritoneal sac, and Gross showed that fæcal extravasation into the peritoneal cavity occurred in every instance. The mucous membrane never blocked the perforation produced by the smallest bullet so as to prevent it—a strong point in favour of active interference. Air in the abdominal cavity, causing tympanites, emphysema around the wound, a larger escape of blood than the injury to the parietes will account for, are among the symptoms which help to indicate intestinal injury. The occurrence of bloody stools is usually a late symptom, and without practical importance in reference to operation. When they appear at an early period they signify intestinal damage. The amount of shock is partly dependent on idiosyncrasy, but prolonged initial shock indicates either general visceral involvement or a great loss of blood; later on the symptoms are those of hyper-acute peritonitis. Shock accompanies all penetrating gunshot wounds to a greater or less extent. When it becomes more and more severe, with increasing exhaustion, jactitation, feeble pulse, and respiration, we may conclude internal hæmorrhage is taking place. This is the most frequent cause of death after gunshot wound of the abdomen, and we usually find the cavity filled with blood quite out of proportion to the size of the vessels injured. Even in the case of small vessels there is but little tendency to spontaneous arrest of hæmorrhage, because of the laxity of the tissues and the absence of atmospheric influence in producing coagulation. As soon as air is freely admitted by abdominal section the bleeding from the lesser arteries is speedily arrested. When a large vessel is injured the bleeding is always excessive, and a fatal result almost directly follows.

Treatment of gunshot perforation of the intestine.—The experiments on dogs prove how futile it is to expect immunity from either intestinal perforation or extravasation of fæces after a bullet has traversed the abdomen; and the same is true of man. The bowel is nearly always perforated, fæces are extravasated, and very frequently there is some other serious injury as well. It will be more reasonable, then, to submit the patient to the less serious risk incurred by abdominal section than to leave him in deadly peril from the consequences of a wounded intestine or a bleeding vessel on the mere assumption that they may possibly have escaped injury. Some degree of doubt must always exist on account of the necessary obscurity of the symptoms, except in the rare event of prolapse of the injured gut, fæcal extravasation appearing externally, or very free hæmorrhage from the wound. But although there may be uncertainty as to the extent of the lesion, it is surely better to solve the doubt by an exploratory abdominal section, which may afford the only possible means of rescue. If we await the outbreak of peritonitis, the patient's chances of recovery after operation will be greatly diminished. Operation is practically useless after twenty-four hours have elapsed, or when general peritonitis and great collapse have set in. A slight amount of peritonitis, however, by no means contra-indicates operation. If we are satisfied that laparotomy is the proper proceeding, and decide to explore the abdomen, the operation should be undertaken as soon as possible after the infliction of the injury, and performed with every antiseptic precaution. When it has been delayed, the condition of shock is so much aggravated by the necessarily prolonged operation that it may be impossible to complete the thorough disinfection of the cavity. The median incision must be sufficiently extensive to allow all parts of the abdomen to be explored; it should be large enough to admit the operator's hand, and none but his should ever be allowed to enter the peritoneal cavity. The mere enlargement of an existing wound is inadequate for the purpose of thorough exploration. The bullet wound in the abdominal wall should be explored when necessary for purposes of diagnosis, otherwise it ought simply to be disinfected and included under the general dressing. Abdominal section enables us to determine the extent of the injury and the treatment which should be adopted. The entire cavity and its contents can be thoroughly examined. An injury is less liable to be overlooked, and the suture of the bowel is more readily accomplished. The operation is incomplete unless the entire intestinal tract be examined as well as the stomach and other viscera, which, of course, entails considerable

manipulation. The intestines must be withdrawn, carefully examined, and protected as far as possible by warm cloths. The best way is to seek the cæcum first, and then trace the small intestine upwards for its entire length; in this way we shall be least likely to fail to find the injury. All bleeding points must be secured and the clots swept away. When several openings exist close together, it is better to resect the portion of intestine involved. In some instances, when the bowel wall is seriously compromised at one or more distant points, multiple resections have been made. Ingenious clamps, such as those of Rydygier, Treves, and others, have been suggested, but

FIG. 2.

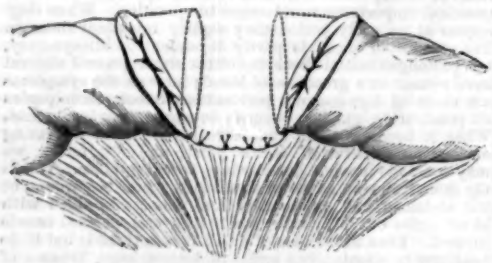
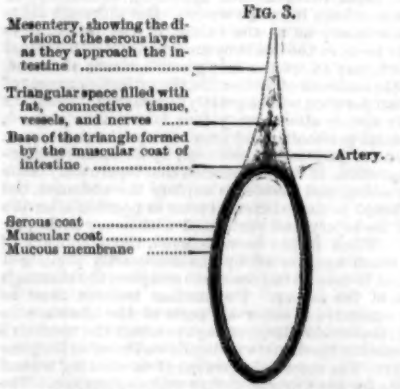


Illustration of the appearance of the resected bowel with its edges much everted previously to the introduction of the sutures. In the margins of the separated portion of mesentery four points of suture have been introduced after the vessels were secured by ligature.

When a complete resection of the bowel is performed, the margins of the opening in the gut should be divided in a slightly radiating or oblique manner, so as to remove rather more on the convex than the concave or mesenteric border. When the Lembert's suture is tied, the channel of the united portion of the bowel will thus be straighter, and there is less liability to interference with the free passage of its contents at the point necessarily narrowed by the suture. The mesentery should be cut through as close as possible to the intestine, and after all bleeding has been arrested, the two cut edges are sutured together.

the fingers are probably the best form of instrument to prevent the escape of the intestinal contents after division of the tube. The mesentery must be detached from the part of the gut to be resected. When a large portion requires removal, a triangular piece of mesentery may have to be excised, taking care to secure separately every bleeding point. The mucous coat becomes much everted (Fig. 2), sometimes seriously interfering with the introduction of the sutures

FIG. 3.


Mesentery, showing the division of the serous layers as they approach the intestine
Triangular space filled with fat, connective tissue, vessels, and nerves
Base of the triangle formed by the muscular coat of intestine
Artery.
Serous coat
Muscular coat
Mucous membrane

Semi-diagrammatic section of the jejunum (natural size). The muscular layer through which the sutures are passed is comparatively thick.

and the accurate approximation of the surfaces of the bowel. It should not be excised, as it gives support, and supplies blood to the edges of the gut. In all the experiments where it was cut off by scissors the sutures gave way (Parkes). Care must be taken to insert the sutures at the mesenteric border sufficiently deep to ensure complete inversion of the intestine, and to bring the serous surfaces fairly into contact. There is a triangular interval (Figs. 3, 4, 5), filled with connective tissue and bloodvessels, between the layers of the peritoneal coat as it leaves the bowel to form the mesentery. At this place the needle must be passed deeply enough to include the muscular coat as well as the serous, otherwise extravasation will result. Three sutures should be first introduced at the mesenteric border in the manner insisted upon by Parkes. A suture had then better be placed at the convexity of the bowel, then one half-way down on each side, the others following in order in the quadrantal intervals between. Each suture should be introduced not less than a third of an inch from the divided margins, brought out just free of

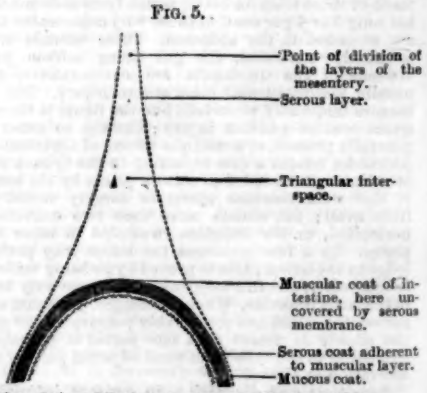
FIG. 4.

Section of ileum, from the same subject (natural size).

Figs. 3 and 4 illustrate the comparative thickness of the wall of these two portions of the intestine, and show how thin the muscular layer is in the ileum.

the edge on one side, then reintroduced close to the opposite edge, and made to include about the same width of tissue. It should include only the serous and muscular layers. In cases of complete resection of the bowel it is best to include a considerable width of serous membrane. It is more difficult to pass the sutures in succession one after the other all the way round; the mucous membrane is in the way, and the sutures are apt to be uneven. Fine silk is the best material to employ, and a moderately curved needle. Czerny's double row is very tedious to apply, and as it gives no better results than the single row, including a sufficient width of tissue, it had better be abandoned on

FIG. 5.


Point of division of the layers of the mesentery.
Serous layer.
Triangular interspace.
Muscular coat of intestine, here uncovered by serous membrane.
Serous coat adherent to muscular layer.
Mucous coat.

Enlarged view of the inter-serous space (diagrammatic).

account of the loss of time it entails, or, if used at all, it can only be necessary along the mesenteric border. The condition of the solid viscera must then be examined and any injury found in them dealt with according to circumstances. This will, however, prove a very fatal complication.

Abdominal injury without external wound.—Violent contusion of the abdomen may result in rupture of any of its contained viscera, a condition for which laparotomy has been very rarely performed.

Rupture of the intestine.—In these cases an exact diagnosis must always be very difficult, oftentimes quite impossible to arrive at, as the symptoms are obscure and common to several degrees and kind of injury. Serious hesitation must always occur when we are called upon to decide in the presence of each particular case what is the best line of treatment to adopt. One has seen many cases of severe abdominal injury recover, while many very speedily die. The most serious injury is sometimes unaccompanied by any definite diagnostic symptoms.

Symptoms and indications for operation.—The chief indications for operative interference are afforded by the mode of action and severity of the violence, the presence of prolonged and profound shock. The duration of the shock is of greater importance than its intensity. A small and quick pulse and hurried respiration, while the temperature remains either normal or subnormal, associated with acutely severe, persistent, and localised pain, increased on pressure, indicate the serious nature of the injury. Bloody vomit or stool, rapid tympany, the evidence of percussion, are inconstant signs, and help us but little. The jejunum and ileum are the portions of intestine most frequently ruptured, and the rent will generally be found just behind the part of the abdomen which has been struck—a fact which can easily be verified by experiment. In about 15 per cent. of the cases more than one loop of intestine is damaged, and in that case the injury generally occurs in super-imposed coils. It is difficult at first to distinguish the syncope induced by hæmorrhage from the shock caused by a ruptured intestine. In the early period we shall have to arrive at a diagnosis from the nature and violence of the injury and the general condition of the patient. When peritonitis is declared, an exploratory operation is urgently indicated, as collapse comes on very quickly, sometimes very suddenly, and a few hours' delay may negative all prospect of recovery.

Treatment.—Absolute rest has hitherto been the chief indication for treatment. But cases do arise in which abdominal section should be practised, and an attempt made to discover and deal with the visceral wound, arrest the bleeding, and clear away the clots and extravasated blood. We should interfere when we possess a reasonable belief that the intestine is ruptured. We may in some cases properly propose laparotomy as a means of diagnosis, and, indeed, when intestinal rupture is suspected, the operation should be performed at once to afford a good prospect of success. Exploratory laparotomy has no very serious inconvenience, and should be adopted in those cases where there are reasonable grounds for believing the intestine has been damaged, as in no other way can effective assistance be rendered to the patient. At a later period we have not only the ruptured intestine to deal with, but a septic peritonitis, which produces the most profound depression, and often necessitates an undue curtailment of some essential step in the operation, or occasions the death of the patient before its completion. Extreme collapse, a long interval from the time of the injury, or severe coexisting damage to the spleen, liver, or pancreas, of course contra-indicate operation. The incision should be made in the middle line in all cases, and at the level which will afford readiest access to the seat of the injury. It is desirable to make it long enough to permit the surgeon to reach without difficulty every part of the interior. According to circumstances, we may then decide to suture the intestinal wound, resect the injured portion of the bowel, or make an artificial anus. The same objections hold in regard to the latter that obtain in respect of artificial anus after gunshot injury. Where it is at all practicable, I believe it best to finally close the opening in the intestine and also the external wound.

THE SEWAGE OF MANCHESTER.—The Rivers Committee of the Manchester Town Council have prepared a report containing particulars of a scheme for dealing with the sewage of the city. The scheme, which is that of the city surveyor, comprises an extensive system of main drains which will carry the sewage of the entire city to Davihulme, where it will be dealt with by precipitation works on the principle of those now in successful operation at Leeds. The effluent water will pass into the river Irwell, which stream, by the means to be adopted, will be relieved of much of its impurity. The maximum expenditure to be incurred to cover works, land, easements, and all other contingencies is set down at £500,000.

A Clinical Lecture

ON THE

PATHOLOGY AND TREATMENT OF LARYNGISMUS, TETANY, AND CONVULSIONS,

ILLUSTRATED BY CASES OF THESE DISORDERS IN CHILDHOOD, AND ALSO BY A CASE OF THE TETANY OF ADULT LIFE.

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LARYNGISMUS, tetany, and convulsions are different expressions of the same constitutional morbid state, are associated especially with the first two years of life, with the period of rickets, and with the period of dentition. They are all distinguished by the occurrence of muscular spasms. In the first by a transient spasm of the laryngeal muscles, lasting only for a few seconds, and then ceasing absolutely during an indefinite period of rest. In the second by a persistent tonic spasm of the flexors and adductors of the hands and feet, varying in degree, liable to exacerbations, but never relaxing absolutely. When this is at its worst the cramps are painful. There is also twitching and fibrillar contraction to be obtained of the orbicularis and levator anguli oris on stimulating the skin by scratching over the pes anserinus[1]. In the third the whole of the voluntary muscles are usually involved, and there is loss of consciousness. There may be complete relaxation between the attacks, or more or less continued rigidity of certain groups—as the flexors of the hands and feet, for example.

Laryngismus, tetany, and general convulsions are the positive, comparative, and superlative of the convulsive state in children. Convulsions no doubt occur in special circumstances apart altogether from laryngismus and tetany, and the peculiar constitutional state with which they are, as a rule, associated—as, for example, as a result of the irritation of round worms in the intestine, of undigested food, of irritation of the dental nerves; and in uræmia and in meningitis. But in the vast majority of cases there exists as a predisposing cause a special constitutional state, in which the nervous system is in an extreme state of hyper-excitability or mobility—a state of "erethism," as it is called; and in this state slight causes of irritation which would be innocuous in a condition of stability set up the muscular motor spasm of laryngismus, tetany, or general convulsions. It is my object in this lecture to demonstrate as clearly as I can in what the essence of this predisposing constitutional state consists, in order that the principles upon which these affections must be treated may be fully recognised and understood; that I may warn you against the erroneous practice which widely prevails, and enforce safe and wise treatment of these common and serious disorders, with which in the course of your career you will be frequently called upon to deal.

Let me illustrate the clinical features of the three phases of spasmodic motor disturbance by one or two examples, and first a case of simple laryngismus stridulus.

Mrs. I.——'s child, a boy of one year and seven months, was brought to me in December 1883, suffering from frequently recurring attacks of spasm of the glottis, from which it had suffered for the past six months. At first the seizures were merely occasional crowing inspirations, then after a time more severe; the breath stopped until the child became black in the face and was almost suffocated. Sometimes these attacks recurred every half-hour, the child waking up in the night with them; there was always a severe one on first waking in the morning, but the most alarming seizures oc-

[1] Tetany must be distinguished from idiopathic tetanus; indeed, there is little difficulty in the diagnosis. The fact that in the one case—tetanus—the contractions commence in the jaws and the muscles of expression, extend to the trunk, and only slowly and at last to the extremities, while in the other—tetany—the contractions commence in the extremities, and only extend to the trunk in rare cases afterwards, and seldom occur in the extremities and trunk simultaneously, serves to distinguish the two; moreover, the peculiar form of the contraction of the hands and feet is in itself pathognomonic—i.e., tetanoid contractions as distinguished from tetanic.

curred during the day, when the child was excited by laughter or vexation or crying. The child was extremely rickety, the forehead prominent, the fontanelle widely opened, the ribs beaded, and the wrists enlarged, but the long bones were not curved. It had great perspiration of the head at night; frequent diarrhœa; the muscles were soft and flabby; it could not walk; it had two teeth only, whereas at this age it should have had at least ten or twelve. There was no tetany or spasm; the thumbs were not drawn in, nor the toes flexed. The child had frequent attacks of crowing inspiration as I examined it. The explanation of the rickety condition was given by the history. It was kept at the breast until thirteen months old; latterly the mother had very little milk for it, and could give it the breast twice a day only. In addition to this it had nothing but nursery biscuits—no cows' milk, no beef-tea. After it was weaned, at thirteen months, it had a pint of cows' milk, Osborne biscuits, bread, and gravy. It had frequent diarrhœa. Here was a child, then, brought up on insufficient animal food; the imperfect nutrition was aggravated by frequent diarrhœa, hence nervous instability. A source of irritation increasing the motor nerve excitability was partly the intestinal catarrh, partly perhaps the irritation of teeth slowly making their way through the gums. The immediate cause of each spasm was the emotional excitement of laughter, or crying, or a breath of cold air. The invariable attack on waking was probably set up by the crying a child indulges in so often then, or the greater activity of the reflex function on the waking state. The treatment consisted in giving four grains of bromide of potassium with one grain of chloral every six hours, to relieve the spasm. During the attack cold water was directed to be dashed in the face, or a hot sponge to be applied to the throat. To improve nutrition and remove the predisposing cause of the convulsive seizures, two ounces of raw meat pulp and wheat flour with milk; this to be the sole diet. The baby was to be kept quiet—not played with, crossed, excited, or exposed to a stream of cold air. The child took the food well; the attacks at once grew fewer and less severe, coming on only on waking or under special excitement. The treatment by chloral and bromide was omitted for a time by the parents, with the result of a return of laryngismus and two severe general convulsions. After this warning the treatment was steadily continued, and the child got well without further relapse.

In the case I have related there was no tetany, but larnygismus with general convulsions. In the next case the laryngismus was accompanied by the tetanoid condition, but there were no general convulsions.

In December, 1883, I saw in consultation with Dr. —— a child of eleven months—a thin, miserable, white-faced child, with flabby muscles, projecting forehead, widely open fontanelle, pigeon breast, beaded ribs, and enlarged ends of the long bones. It had no teeth; at this age it should have had four or five at least. It had, in fact, all the signs of well-marked rickets. It had had repeated attacks of sickness and constant diarrhœa, no food seeming to agree with it. It was anæmic, chill, its temperature subnormal. I was asked to see it, however, chiefly on account of attacks of spasm of the glottis. These were occasionally so severe and prolonged as to bring the child to the verge of suffocation. They were brought on by the smallest excitement, but were most intense on first waking in the morning, or when induced by angry crying or by laughter—a feature of the preceding case, and I think universal in this disorder. On examining the child more minutely, the thumbs were seen to be tightly drawn in to the palm, which was arched longitudinally, the fingers adducted and overlapping each other—the typical so-called "accoucheur's hand" of tetany. The feet were arched and the toes flexed. The dorsum of the foot was much swollen, as if dropsical, but there was no actual œdema, the swelling being due probably to pressure of contracting muscles, not sufficient to produce effusion, acting just as a tight bandage does. The child was constantly crying with the pain of this cramp when the spasm was most intense. Twitching of the orbicularis and levator anguli oris could be induced by scratching the skin over the pes anserinus. The attacks of laryngismus had been increasing in intensity. The family history of the patient was remarkable and highly significant. There had been five children born alive, all strong, plump, and apparently healthy; yet of these five three died. The first had general convulsions at three months, and died in an attack of laryngismus at six months. The second died at six months and a half of diarrhœa and wasting; no laryngismus or convulsions. The third is still alive and fairly well, but she was weakly as an infant, and had two convulsions when teething. The fourth had "croup" when four months old, and died at the age of a year and ten months from general convulsions. The fifth was the youngest, who came under my observation in the condition I have described. So that four out of the five children had convulsive seizures, and the one who escaped convulsions had diarrhœa and atrophy. What is the explanation of this remarkable predisposition to convulsions. Was it an inherited tendency? a congenital nervous hyper-excitability? I think not. The tendency had been acquired—developed by defective nutrition. The explanation lay in the fact that all these children had been brought up by hand. The mother, closely engaged in business, could not give time to suckle her children. They were fed chiefly on corn flour, infants' food made without milk, and arrowroot, with hardly any milk, for cows' milk disagreed with all and caused vomiting and diarrhœa. No other animal food was given to make up for this. The only exception was the little patient. The parents rising in circumstances, the mother was able to give time to nurse the youngest baby, but she found she had little milk to give. So this, too, had corn flour and all kinds of things in the shape of bread-and-butter and farinaceous food. Its appetite was ravenous. The bowels were always loose, and it often had sickness. I advised that for the immediate relief of the laryngeal spasm half a grain of chloral and four grains of bromide should be given every four hours, and that the diet should be changed to one of animal food chiefly, with abundant nitrogenous matter; two ounces of raw meat, boiled milk diluted with one-third water, and thickened with entire wheat flour thoroughly boiled; with this, half a teaspoonful of brandy in a tablespoonful of food every four hours—a valuable assistance to circulation in these chilled, feeble children, and, moreover, a most useful nervous sedative in early life. The fits at once declined both in frequency and severity, and the tetanoid spasm of the hands and feet gradually relaxed. When I saw the patient again, in a week's time, the thumbs and toes were flexed, but the palms of the hands and soles of the feet were no longer arched or rigid. She improved steadily, and escaped convulsions; the attacks of laryngismus declined to two or three a week, and then not severe, instead of ten or twelve a day as at first. Then there was a relapse, when the bromide and chloral were stopped, but the laryngismus quickly subsided, and there were no more seizures. Cod-liver oil and lacto-phosphate of lime were given; and when seen six months afterwards, the child was stout, hard-fleshed, and robust in health, and had got five teeth (at one year and five months).

It is very curious and instructive to compare tetany in a child with what is called tetany in an adult. A case of this latter kind came under my care at St. Mary's Hospital in the spring of 1884. The patient was a thin, ill-nourished, anæmic girl of seventeen years of age. Her condition was briefly this. Both wrists were flexed, the hand being drawn towards the ulnar side, the thumbs firmly adducted and drawn across the palm of the hand; the fingers were partly flexed at the metacarpo-phalangeal joints, and slightly flexed at the phalangeal joints. Thus the hand became narrowed into the characteristic conical form.[2] Both hands were affected, the left being rather worse than the right. There was pain in the wrists and over the metacarpo-phalangeal joints. The skin over them was exquisitely tender and red. There was hyperæsthesia generally of the back of the hand and the ulnar side of the forearm. Any attempt to forcibly extend the fingers caused intense suffering. The lower limbs were free from contractions, yet as the patient sat up in bed to have her chest examined cramp came on suddenly in the right leg. The foot was forcibly extended by the spasmodic contraction of the calf muscles, the pain causing her to cry out sharply. When the patient resumed the recumbent posture the cramp instantly ceased. It was found, moreover, that no spasm was brought on if the patient kept her legs hanging down over the side of the bed when she sat up, or by walking a step or two. So that the spasm was clearly produced, not by the calf muscles being brought into active contraction, but by passive stretching of them.

[2] This form of contraction of the hand appears to be due to (1) the action of the adductor pollicis and flexor brevis pollicis, (2) palmar interossei hollowing the palm, (3) dorsal interossei causing separation of the fingers as attack passes off. All supplied by ulnar nerve. (Abercrombie: Tetany in Children, p. 16.)

Generally there was observed to be hyperæmia wherever there had been pressure—as over the patella where the bedclothes rested, over the spines of the scapulæ, and at the tops of the elbows. The tache cérébrale was readily produced. No fibrillar contractions of the orbicularis palpebrarum, or levator alæ nasi, or levator anguli oris could be induced by scratching the skin over the pes anserinus, as observed in severe cases in children. We made out that the contractions had commenced two days before, when the right hand began to feel stiff. On the next morning when she woke it was rigid, with the thumb drawn in as described, and great pain localised about the styloid process of the ulna. The left hand remained unaffected until the following morning, and soon became in the same state as the right. But although the tetanoid spasms had arisen two days before, they were by no means the commencement of the illness. The cramps were merely the sequel and outcome of previous disorder. The girl had been ill three weeks. She had had pyrexia and constant diarrhœa. An elder sister had just recovered from typhoid fever; another sister was down with it. The patient's temperature was 100·5°; pulse 120; tongue red; spleen enlarged and tender; no spots; stools not distinctive. But there was no doubt the girl was just recovering from a moderate attack of typhoid fever. In her history the following noteworthy facts appeared: In infancy she had convulsions when teething, and had been especially liable to croup and bronchitis. When twelve years old she had chorea. At twenty she was a surgical in-patient at St. Mary's Hospital with abscess in the side from necrosis of a rib, and had contraction of the muscles of the left arm, with pain lasting only twenty-four hours. Six other children, her brothers and sisters, had died, four of consumption, one of infantile convulsions, and one of bronchitis. Ten grains of chloral were ordered every four hours. In three days the tonic spasm had disappeared, stiffness and numbness alone remaining for a fortnight longer. For six weeks, however, cramps could be produced in the legs by forcible flexion of the ankle-joints. But the spasm could never even at first be produced by pressure on the brachial artery severe enough to blanch the limb, which Trousseau affirmed to be a distinctive feature of tetany. At the end of the six weeks she was well.

I think it is clear that the tetany in this case was identical with the tetany in the child. The spasm of the extremities in each was the typical contraction of tetany. The chief difference lay in the absence of facial irritability and of laryngeal spasm in the young woman—features of the disorder so characteristic in a young child. The presence of these special signs in infancy is probably due to the greater reflex nervous excitability notable in young children. If you toss a perfectly healthy baby into the air it crows, catches its breath—i.e., has slight laryngismus or spasm of the glottis. Some children, too, who are strong and healthy in every way apparently, get spasm of the glottis when in a violent fit of passion. The comparison of these cases of tetanoid spasm is interesting, and the question of their identity important, because it throws light upon the causation. I lay stress upon it on account of the bearing it has upon the pathology and treatment of the disease, as I shall show shortly, and also because it has been suggested that the tetany of children is a different affection from that described by Trousseau and others who had followed his lead in this matter.[3] Trousseau appears to have drawn his description of the disease chiefly from adults, although he mentions tetany as occurring frequently in infancy. Now the disorder as we see it in this country so commonly in children undoubtedly does not correspond absolutely with the original description. Trousseau laid stress upon the intermittent character of the spasms, and upon their being excited afresh, at will, by pressure "over principal nerve trunks, or over bloodvessels so as to impede the venous or arterial circulation." But in the case of the young woman these special characters were wanting. The spasms were not intermittent, and could not be reinduced at will by pressure over nerve or vessels; corresponding thus exactly with the case of the child, and agreeable to the observations of Henoch and Abercrombie in children. I have never seen a case in which the intermission of the contractions was complete. There is always variation in the degree and intensity of contraction, partial remissions, and exacerbations, but no absolute cessation, often for weeks. So that in all cases of children, and in the only adult which I have examined with regard to these points, these two symptoms, so prominent in Trousseau's picture—viz., the intermittent character of the spasm and its reinduction at will by pressure on nerve trunks or vessels,—have been altogether wanting. You will remember, however, that in the case of the young woman spasm of the calf muscles was at once produced by stretching, and it is significant that in children Dr. Abercrombie noted that muscles became more rigid on handling. It is possible, I think, that this phenomenon of hyper-excitability on pressure of muscle or stretching of it may have given rise to the impression that the spasm was excited by pressure on nerve or vessels, when it was in reality due to the stimulation of rough handling or stretching of muscle.

Another curious point with regard to the history of tetany is the fact before mentioned, that it has been described chiefly in relation to its occurrence in adults, whereas it is far more common in children. Of the seven cases given by Trousseau six were in adults, one only in a child. Of twelve cases I find in the medical journals (chiefly about 1870, when the subject cropped up, I suppose in consequence of the publication of Trousseau's Lectures by the Sydenham Society), two only were in children. Yet my friend and colleague Dr. Abercrombie, who has given the most complete account of the disorder in children in one year, met with no less than fourteen cases in children in this hospital. I have seen a very large number of cases in children, and only three or four in adults in the whole of my experience in this hospital, in a large general hospital, and in private. The fact is that, in children, this condition, when not extreme enough to be painful or obtrusive, is constantly disregarded because it occurs in connexion with laryngismus stridulus and convulsions. The minor is overshadowed by the major symptom, whereas in adults tetanoid contraction is the most prominent feature. Yet the peculiar spasm of hands and feet has been frequently described by authors, under the name of carpo-pedal contractions, as one of the symptoms accompanying laryngismus. Dr. Ley, Dr. West, Dr. Hillier, Meigs, and Pepper so describe it. The first person to identify these carpo-pedal contractions with tetany was Dr. Abercrombie, to whose excellent paper on the subject I refer you for much useful information.[4]

(To be concluded.)

[3] Henoch, for example, speaking of this condition, which he terms the idiopathic contractures of childhood, says: "This affection is classed with tetany by many, but in my opinion it is well to separate the two diseases entirely. I have never been able to detect the symptoms regarded by Trousseau as characteristic—viz., production of the contractures by pressure on the artery supplying the affected limb—in idiopathic contractures of children." Dr. Abercrombie, for similar reasons, expresses doubts as to the identity of the tetany of children with Trousseau's disease.

Lectures
ON
INJURIES OF NERVES.

Delivered at the Royal College of Surgeons,

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LECTURE I.

(Concluded from page 865.)

Union by first intention.—I have already said that the usual result of nerve section is degeneration of the entire peripheral end, and the question at once arises whether such a degeneration is invariable, or whether union by first intention, independently of such degeneration, can occur. As regards the fowl, Glück has very clearly shown that if the cut ends of a divided nerve are carefully sutured, degeneration may be entirely prevented; and although other experimenters disagree with him, in my opinion his conclusions are warranted. It is of course quite another question whether union by first intention occurs in man, for it must be clearly kept in mind that the results of experiments on the nerves of animals cannot be directly

[4] Tetany in Young Children. Thesis for the degree of M.D. at Cambridge; Baillière and Co., King William-street, Strand.

transferred to man. The subject is one on which there has been much controversy, but I may say at once that from clinical observations I have no doubt of the possibility of primary union, although I think it is certainly very rare, and in support of my opinions will quote the following two cases.

H. H——, aged twenty-three, was admitted into St. Bartholomew's Hospital on Nov. 20th, 1881. He had fallen with outstretched hands on to some sheets of loose glass a few minutes before arriving at the hospital. On examination I found a large lacerated wound about an inch above the palmar surface of the right wrist, a flap of skin and muscle being turned downwards towards the palm of the hand. The whole of the flexor tendons of the wrist and fingers, except the flexor carpi ulnaris and the innermost tendon of the flexor sublimis digitorum, were divided. A small piece of bone was cut out of the radius, and the pronator quadratus was torn. The radial and interosseous arteries bled freely, and were tied; the arteria comes nervi mediani, which was very large, was similarly treated. The median nerve had been divided in two places, and the intervening portion of it, nearly an inch in length, lay loose in the wound, and was accordingly removed. I then drew down and stretched the upper end as forcibly as possible, and sutured it to the lower portion with carbolised catgut, the cut surfaces being brought into contact with some difficulty after extreme flexion of the wrist. As many tendons as possible were similarly fixed, and the wound dressed with carbolised oil, the hand being steadied in a position of flexion by means of a splint.—Nov. 21st: Much pain in the hand; no sensation whatever in the parts supplied by the median. Temperature 103°.—22nd: The edges of the skin have sloughed, but the deeper parts look healthy.—Dec. 1st: Sensation has been tested daily, but this morning, for the first time, he can tell which finger is pricked with a pin. No pain. A good deal of the wound has healed, and the part is granulating healthily.—3rd: With his eyes blindfolded he can now tell with certainty which finger is touched with the handle of a pen; the prick of a pin causes pain.—7th: Sensation in the thumb, index, and middle fingers is nearly perfect. He can feel the slightest touch, and can localise it accurately. Is fully sensitive to the prick of a pin, and can move the fingers slightly.—16th: Has much improved in the power of flexion; can thoroughly oppose the thumb and pick up a pin; says he has still a slight sensation of numbness; the fingers are all quite warm and fully sensitive to all stimuli.—24th: The wound has healed except for a very slight ulceration opposite the seat of injury to the radius; he says that, except for some stiffness in the fingers, one hand feels much the same as the other. Has increased power of movement in the fingers and thumb.—Eight months later this patient came to show himself at the hospital. He could not quite bend the fingers into the palm, owing to the adhesions of the tendons to the scar; otherwise there was no difference between the two hands, and the man said he could work and feel as well with one as the other.

I am indebted to Mr. Menzies for the details of the following case, which appears to me to be of unusual interest, alike from the care with which it is recorded and the rapidity with which the functions of the injured nerve were restored.

Primary suture of the median nerve, with union by first intention.—Jas. W——, aged fifteen, was admitted to the West London Hospital on Nov. 29th, 1884, having fallen on a glass bottle and cut his wrist. On examination there was found to be an incised wound an inch and a half long on the anterior aspect of the right wrist. The tendon of the palmaris longus was seen to be divided. The median nerve was completely divided. There was hæmorrhage from the arteria comes nervi mediani, and the patient had complete anæsthesia over the part supplied by the median nerve. The ends of the nerve were exposed and sutured with three catgut stitches passing through the trunk itself.—Nov. 30th: Patient had a good night, but complains of pain.—Dec. 1st: Wound dressed. He has tactile sensation, and localises accurately in the parts which were previously anæsthetic, with the exception of the last two phalanges of the index finger. The prick of a pin causes pain. He can distinguish the points of two pins one inch apart. Sense of temperature is uncertain, especially that of cold.—6th: Wound healing by granulation. Sensation is fully established to all forms of stimuli. He can appreciate the points of two pins half an inch apart, except on the index finger.—8th: Sensation returned in the index finger.—20th: The wound has healed. Sensation is equal to that of the other hand to all stimuli.—Jan. 20th, 1885: He uses the hand quite well; he says it is as good as it was before the injury.—July 20th, 1885: The hand differs in no way from that of the other side; the muscles are quite natural, but they do not react to either faradism or galvanism.

As to the actual lesion, and the rapidity of the subsequent recovery in the first case, there can be no room for doubt, for the patient was seen both at the time of the accident and during his convalescence by many competent observers, and the conditions I have described were frequently verified. The case under the care of Mr. Menzies is, again, in my opinion, quite undoubtedly one in which primary union occurred. In no other way than by actual union of the previously divided fibres is it possible to explain the preservation of such perfect sense of touch, pain, and temperature, and above all of muscular power. As to the completeness and rapidity of the cure the patient himself bore the strongest testimony, insisting that his hand was not numbed for more than about a day, and that it was "quite as good as the other in three weeks," notwithstanding that there had been a considerable wound. In other cases that I have observed there has been noticed a rapid restoration of function after primary suture of various nerves, leading one to believe that some fibres at least had undergone primary union; but the cases already quoted are sufficient for my present purpose—namely, to establish the fact that "primary union" of recently divided nerves, without any antecedent degeneration, is quite possible in man. For although up to the present no case has been recorded in which a microscopic examination could be made of the nerve during the process of repair, yet the complete return of sensation and of motion is a sufficient proof of the reality of primary union. Supposing that in any given case primary union does not occur, the length of time required for the restoration of the continuity of the nerve trunk is very variable. Paget considers that a year or more is requisite. Létiévant observed cases at the end of the nineteenth and fourteenth months respectively. The time required will necessarily depend on many circumstances. If the ends are far apart, if the wound sloughs, if a large quantity of dense cicatricial tissue intervenes, and if the cut nerve contracts adhesions to the surrounding muscles and tendons, union will be long delayed. In connexion with this question the following two cases are of interest: the first being an example of failure of primary union, due probably to separation of the cut ends, followed by subsequent regeneration; the second showing very plainly that, even when the best contact is maintained, primary union may be interfered with by erysipelas and sloughing.

Mary Ann P——, aged nine years, was admitted into St. Bartholomew's Hospital in October, 1879, having sustained a deep cut above the wrist-joint on the palmar surface. There was complete loss of sensation and motion in the parts supplied by the median nerve, but the cut ends could not be found. A few weeks later the patient was discharged unimproved and with some wasting of the muscles of the ball of the thumb. On July 24th, 1882, I had an opportunity of examining the hand and found it in the following condition:—Scar neither painful nor tender. Hand well nourished and plump, not at all atrophied. Fingers straight; can bend them well, but does not make a very good fist. Movements of thumb quite normal. Sensation perfect. No trophic changes. Suffers slight pain in the hand in cold weather. Her mother says that feeling did not begin to return till a year after the child left the hospital, but that since then motion and sensation have steadily improved.

R. W——, aged forty-four, was admitted into St. Bartholomew's Hospital on July 6th, 1882, on account of a wound on the inner side of the upper arm, which divided the biceps and a part of the median nerve. As the divided portions of the nerve tended to separate from each other, catgut sutures were inserted and the ends drawn together; the muscle was treated in a similar manner. On the 11th I found the wound suppurating, and the patient complaining of a sensation of numbness in all his fingers. The sensory condition was as follows:—Thumb: Tactile sensation impaired over the distal phalanx, both front and back; also sensations of pain and temperature; no place, however, is quite anæsthetic. Proximal phalanx normal. Index finger: No sensation of touch, pain, or temperature over the whole palmar surface,

or the dorsal surface of the last phalanx and half the second. Middle finger: No sensation of touch or temperature, but firm pressure with a pin at the tip causes pain, the seat of which he cannot localise; this statement refers to the palmar surface, the back of the finger being in a similar condition to that of the index. The fourth and fifth fingers have their normal sensibilities both back and front, also the entire palm and back of the hand. The movements of all the fingers are unimpaired, but the power to oppose the thumb is very deficient. On July 15th erysipelas of the arm supervened; there was no improvement in the nervous symptoms; no trophic disturbances. The erysipelas lasted some time, and no improvement was present until Aug. 19th, at which time he was able to distinguish two points of a pair of compasses a quarter of an inch apart on the dorsal surface of the second phalanges, and could localise the touch of a pencil except at the tips of the fingers on the palmar surface. At the time I made this note I had not seen the patient for ten days, so am unable to fix the exact date at which sensation commenced to return. A few days later the patient left the hospital, and did not show himself again till October 27th, when he exhibited the following condition: Forearm slightly wasted, and feels firm and hard; the range of supination is limited, apparently by the contraction of the pronator radii teres. Movements of fingers good; ball of thumb much wasted. He has now no power of opposition, the movements of the thumb having deteriorated since he was last seen. Trophic: No other trophic disturbances, but the fingers are cold and blue. Sensation—Thumb: Tactile, thermic, and pain sensations all present, and but little, if at all, impaired. Index: Can localise well all over, but sensation is impaired at the tip; sensation of temperature good. Middle: In much the same condition as index, but the skin over the third phalanx is more anæsthetic. He was now ordered to be galvanised twice a week, and to employ friction to the whole forearm and hand, with a mixture of equal parts of lin. saponis and lin. camph., also to use the forearm as much as possible, and to keep it warm.—Dec. 8th: Further improvement in both motion and sensation. Has returned to his work as a lamp-cleaner on the railway.—Aug. 9th, 1883: Sensation quite perfect everywhere, except in the index and middle fingers at the tips. Even here it is scarcely at all impaired, merely amounting to a slight loss of acuteness. Still some wasting of thumb muscles, but he has fair voluntary power in them. No reaction to electricity. Nails, skin, &c., normal.—March 26th, 1884: Sensation perfect. Muscles quite regenerated, being as large and strong as those of the other hand. All the muscles supplied by the median react to faradism, though as yet only feebly.

In the foregoing case it will be seen that although only part of the nerve was divided and good apposition maintained, yet a year and nine months elapsed before function was completely restored, and there can be little doubt that this delay must be attributed to the erysipelas, which prevented healing by first intention. I may also take the present opportunity of expressing my very firm opinion that the commonly accepted doctrine that partial section or wound of a nerve trunk is more dangerous, and more likely to lead to complications than complete section is quite erroneous. I have no doubt at all that, on the other hand, the amount of trouble is directly proportionate to the amount of nerve fibres divided, and have arrived at this conclusion after a clinical experience of many cases, both of partial and complete section.

The influence that the amount of nerve removed exercises on the length of time requisite for repair is well instanced by experiments on animals recorded by Létiévant. "After a simple section, the reunion of the ends by a cicatrix and the re-establishment of the functions requires three or four months, and this ought to be considered a good result. After resection of a centimetre, the same time is necessary. If more than a centimetre, five, six, twelve months, or more. After resection of more than three centimetres, the ends are only united by fibrous tissue, if at all."

Hill[1] gives the following as a result of experiments on dogs and rabbits:—Simple section: restoration in two, three, or four weeks. Excision of one-eighth of an inch: restoration in two, three, or four months. Excision of half an inch of the sciatic in a dog: restoration in four months. Considering the favourable results obtained by Glück by suture of the two ends after resection of a portion of nerve and the rapid repair in one of the cases I have related above, it is most probable that it is the distance of the divided ends from each other rather than the actual loss of nerve that influences the time required for reunion.

That the cut ends of a divided nerve can unite, even after excision of a considerable portion, is sufficiently proved by the case I have already described. That partial reunion may occur when the ends are widely separated has been shown by Mitchell. Three such cases are recorded by this author and Bertolet in the *American Journal of Medical Science* for 1876. In the first, both the musculo-spiral and median nerves united after excision of about an inch of each. In the second, after removal of an inch of one of the digital nerves, complete union was found in eighteen months. In the third, the radial nerve was repaired within ten months of excision of two inches of its trunk.

But although the preceding cases may fairly be adduced in evidence of the contention that it is possible for restoration of nerve continuity to occur after resection of portions of nerve trunks, it would be the gravest error to draw from such cases the conclusion that reunion occurs as a rule. And it is to be noticed that even in the instances above quoted the restoration of function was most imperfect. In very many cases, even of simple section, which are not treated, no union occurs in man—in far more, I think, than is generally believed; and I cannot agree with Mitchell that "the capacity of nerves to re-make their lost parts is almost invincible."[2] The records of surgery tell a very different tale, and one which is, unfortunately, much more unfavourable for the sufferers from nerve injury. The conclusion that repair of nerves is inevitable has been drawn from a return of pain in cases of neuralgia which have been treated with temporary success by the operation of neurotomy or neurectomy. Such conclusions are not warranted. Pain may return, and so may sensation, independently of nerve regeneration. The real truth is to be found in a study of cases of accidental nerve section which have not been treated, and in such, even where no bulk of nerve has been excised, my own experience and that of many other surgeons is entirely opposed to the conclusion that nerves whose ends are separated show any irresistible tendency to unite. If they unite at all, they do so in a most imperfect manner, and frequently there is no sign of repair. Although, as I have already said, the lower end of the nerve undergoes regeneration even though separated from the proximal portion, it seems probable that, after union by first intention has failed, the bringing together of the divided ends materially hastens the regenerative processes. For, as will subsequently be shown, a suturing together of nerve ends, which have been separated four, five, or six months, is sometimes followed by a very immediate and rapid return of function; in other cases, however, the process is slower, and in some it fails. In the cases which succeed it is evident that the otherwise very tardy process of regeneration is considerably accelerated by a union of the nerve with its centres of nutrition; and this, indeed, is rather what might be expected. Some French surgeons and physiologists have been unable to reconcile the plain facts taught by the results of secondary nerve suture with their theories as to how the injured nerves ought to behave. They argue that because in a given case of secondary suture no nerve fibres or axis cylinders can be found in the distal end at the time of operation, therefore any return of sensation which immediately or in the course of a few days follows operation and suture cannot be due to a re-establishment of the continuity of the injured trunk. Such objections as these will have no weight with anyone who is not hopelessly wedded to theory, for the facts in many of the cases which I shall mention in speaking of "treatment" are too plain to need any further advocacy on my part, and to them I would refer for confirmation of the statement that suture of nerves after many months separation may, and frequently does, result in a rapid restoration of function through a restoration of continuity of the divided axis cylinders.

[1] Medical Times and Gazette, April 22nd, 1868.

[2] Brain, vol. i.

PROVIDENT SURGICAL APPLIANCE SOCIETY.—The fifteenth annual festival in aid of the funds of this Society for the relief of the crippled poor was held on the 23rd ult., Sir Julian Goldsmid, M.P., presiding. During last year 4300 persons were relieved, at a cost of £2200. The secretary during the evening announced subscriptions amounting to about £900.

THE PSYCHIC AND NERVOUS INFLUENCES IN DISEASES OF WOMEN.

BY HORATIO R. BIGELOW, M.D.

I WISH to emphasise with some force the distinction between the psychic or super-cerebral force and the chemico-molecular action, which is the expression of nervous energy, in the causation of many of the ills called gynæcological. The nervous energy may be directly objective, as alone concerned, without appealing to a higher agency; or it may be subjective, acting simply as a common carrier, transmitting its message of woe, and waiting for the ultimate order. The psychic exaltation or depression, generally speaking, merely calls forth a perversion of function; while the disturbed nervous energy, including trophic and vaso-motor changes, may occasion organic lesion. To regard the female pelvic organs as isolated points, without direct connexion with the whole bodily economy, is not a common heresy, but it is a danger that threatens, and gains ground the faster that gynæcologists absorb themselves with one branch of scientific medicine to the exclusion of all the others. He would be a poor physician who should forget the relationship of liver and stomach to cardiac disease, and he an equally unscientific gynæcologist who would castrate every hysterical woman. Surely the indefinable super-physical expression of a force that makes the physical weakling a hero in the battle of life; that radiates from itself a will so iron that even the strongest have been known to quail before it; that from a bed of suffering can create and originate; that can control a household or a community—surely such a power as this demands recognition in all of the processes concerning it. It makes no difference in the ultimate purpose of this paper whether we look upon the will as the *final* action of many separate cerebral departments—a desire or aversion sufficiently strong to generate action; or whether we look upon it as a material entity whose freedom is assured by the divine fingers that attune it,—the fact still remains that the psychic force, however manifested, must always demand consideration from the specialist. The autocracy of such a monarch cannot be disputed, and his messages, borne on the wings of his fleet-footed messengers—the nerves,—will set many an intelligent physician to patient thinking. All specialism is dangerous in proportion as it becomes exclusive or seeks to narrow a wide and general field of intelligence. No one can hope for success in any specialty unless he is intelligently instructed upon the salient features of other specialties. And perhaps in no other calling so largely as in gynæcology is it necessary to be acquainted with the subjective life of woman. What are her thoughts, her hopes, her aspirations? How largely is she given to introspection? How firmly and in what manner is her ideal building? Then we must know of her objective necessities in æsthetics and social graces, and train ourselves in the many little things that go largely into the make-up of womanly comfort, and which will gain the patient's confidence in the proportion in which we embody them in our actions. So much by way of preface. We now come to something practical, although after that has been said the necessities of the subject must drift us back again to theoretical reasoning.

The nerves with which the gynæcologist must concern himself are—the plexus solaris or cœliacus; the plexus mesentericus, superior and inferior; the plexus aorticus abdominalis; the plexus hypogastricus superior; the plexus spermaticus; and the plexus hypogastricus inferior, between the floor of the bladder and the rectum. From the cord (from the plexus lumbalis) we have the nervi ilio-hypogastrici, ilio-inguinales, genito-crurales (a favourite seat of neuralgic pain); the plexus and ganglion at the cervix (described by Frankenhauser and Jastrebow); the nuclei terminations in the unstriped muscle of the uterus (Frankenhauser); the ganglionic terminations in the mucous membrane, and the end bulbs in the clitoris and vagina. The vagina, uterus, Fallopian tube, and ovary are supplied by filaments from the inferior hypogastric plexuses. The muscles receive supply as follows: the levator ani and sphincter ani by the inferior hæmorrhoidal branch of the pudic, fourth and fifth sacral, and coccygeal nerves; the coccygeus by the fourth and fifth sacral and coccygeal nerves; the muscles of the perineum and clitoris by branches of the pudic nerve. These are they, then, which give rise to those immediate reflex neuroses with which the gynæcologist has to do. Other nerves there are, of equal importance, giving origin to reflex symptoms equally distressing, and with which he should make himself acquainted; for palpitation of the heart, nervous dyspepsia, spasmodic contraction of the gall-bladder, or migraine, will not disappear coincidently with the righting of a dislocated uterus, with the sewing up of a lacerated cervix, with the extirpation of an offending ovary, or with the healing of an endometritis.

In losing sight of constitutional causes as factors of local disease all special erudition and all clever handiwork will be in vain. Many ills to which women are liable are merely *symptoms*, and they will never cease their direful work until intelligence looks deeper and attacks the exciting cause. It will not be one particle of service to attack a retro-verted uterus with pessaries (a refinement of torture and of unscientific deduction of this nineteenth century) in a highly nervous woman, whose trouble rests not with her womb, but with her "run down" condition generally. I will go a step further, and assert that rest, good diet and regular, electricity, massage, and Turkish bathing (when indicated), with wholesome psychic surroundings, will, in very many instances which receive nowadays only local attention, accomplish more permanent and real good than any special interference. Vastly more harm than good has resulted from the happy-go-lucky way of applying pessaries, and quite as much evil comes from the brusque way we have of relegating all womanly suffering to pelvic derangement, and then rushing blindly at that, irrespective of the shock we may occasion to a highly modest and sensitive woman. Liebermeister asserts that this *nervosität* is due to a disease of the grey substance of the brain which depends upon a derangement of the lower brain function, as contra-distinguished from the true disease of the brain, which is due to a disturbance of the higher psychic function. Convinced in my own mind that Liebermeister is right, I should seek to improve every detail of the woman's environment, subjective and objective, before resorting to local interference; of course I mean in those instances in which the local trouble is purely secondary. "Run down" women, women with all sorts of anomalous aches and pains, women given to morbid introspection although they *may* have some pelvic pathological condition, demand first constitutional handling, and we simply intensify every bad symptom by ambitious specialism. Rheinstaedter[1] says: "I have never yet done a castration for *nervosität*, and I intend never doing so in the future. How can we hope to cure a brain disease through castration? Why do we not castrate men for nervousness?" The radical operation of oöphorectomy in case of neurasthenic hysteria (and I mean by this an hysteria which is clearly due to nerve exhaustion) is *never* indicated, neither can it ever be indicated in pure neurasthenia. In pure hysteria it is only justifiable when the exciting cause can be clearly and absolutely located in the ovary beyond all question of a reasonable doubt, and even then it should never be thought of until we have exhausted all the means of conservative treatment which recent investigation has placed within our reach. It seems to me that the clear indications for so dangerous an operation are so very small as to be almost *nil*, and I am convinced that many cases on record so operated upon would have gone on to a wholesome recovery under strict conservative treatment, as we realise and recognise it to-day—a treatment that requires boundless patience both from patient and physician, but which accomplishes its purpose surely and almost insensibly to the woman, until she finds herself carrying out the daily duties of life as most women do, and with the same measure of comfort. A woman's mind has much to do with her general condition, and herein lies the secret of the rest treatment. With a mind at absolute rest, with no thought of the morrow to conjure up the fiend of ways and means, with a complete realisation of the *dolce far niente*, we have at hand a more potent medicine than any sent out from drug stores. And I know, because what I have seen I believe, that under such rational handling many gynæcological cases go on to recovery without any local interference. Of very especial value is rest treatment, because it enables the physician to discipline the disorganised will, and to bring it into harmonious relationship with the other bodily functions. Hysteria disappears at once under an organised, well-sustained moral discipline. The nervous condition,

[1] Praktische Grundzüge der Gynækologie. Berlin, 1886.

which is the underlying cause, is one of exaggeration, congestion, and exhaustion, and these all disappear upon proper hygienic observances, conjoined to will training. The weakened will itself is but part and parcel of the whole nervous disorganisation, and will regain its normal standard as soon as the other functions return to a physiological basis. The nerve-supply of the female pelvis is not a distinct and isolated department, but intimately connected with the whole nervous system. So that disorganised function anywhere, but the more especially in the brain and spinal cord, may transmit its influence to the ovary. If we admit the possibility of "maternal impressions" stamping themselves upon the fœtus in utero, we must also admit that certain states of consciousness can impress themselves upon and be felt within the uterus. This premiss seems reasonable by virtue of the direct connexion between the mucous membrane of the uterus and the chief mucous centres. Clinical evidence of the influence of the brain upon the uterus is ample. A prolonged unhealthy nervous influence would set up a correspondingly unhealthy action in the organ reached and affected by it. Not only directly through the filaments and ganglions, but also by its effect upon blood-supply, will any derangement of nervous function be sensibly appreciated by other and remote organs. Either congestion or anæmia may result from prolonged states of cerebral excitement or exhaustion. Arterial tension hinges largely upon states of consciousness, and menstruation, which is one of its expressions, is always regulated by the nervous condition of the woman. I am not at all sure but that many of the changes in the endometrium that occasion thickening, hyperplastic proliferation, tumour growths, and malignant hyperplasia of the uterine glands are due first to nervous influences, subsequent congestion, and generally altered blood-supply. If this be so, we should address ourselves first to a normal rehabilitation of nerve and bloodvessel, and then seek to eradicate any local condition which would interfere with such treatment. Gynæcology has handicapped itself with excess of detail, and, like all specialties, its field of vision is limited. The success of a few, who do little or nothing else, has created a surgical epidemic, and whole communities rush headlong into a *strom*, where experience is partially learned at the cost of hundreds of lives sacrificed. These habits of thought and medical crazes revolve in certain well-known cycles. Already there is the faint flutter that precedes the coming storm. We are on the eve of a change in gynæcological practice, in which the scalpel will be the bar sinister and conservatism the crest and crown of our special coat of arms. Define the limits of abdominal surgery to its narrowest confines, and then let those only practise it who are educated to it and who devote their lives to it; no others have the right to place a human life in jeopardy. I have said that there are countless instances on record, where special surgery has failed to relieve general symptoms, and of these ailments none is more common than neuralgia of the trigeminus nerve, or so-called migraine.[1] The cry of the trigeminus is the echo perhaps of the uterine wail, they both ache synchronously with the pathological pain of the central system, which is labouring to carry out its daily routine under unnatural effort. The migraine and the "pain in the side" (ovarian) are merely symptoms, and can be best reached, and only reached, so far as I know, by constitutional treatment. You will not cure the migraine by extirpating the ovary, and you will not cure the ovary-ache by resecting the trigeminus, even were one bold enough to attempt it. One operation is about as sensible as the other. Take the complex symptomatology of oöphoritis (a most vague term, rather a cloak of ignorance than the expression of scientific pathology), with its pain in the side, leg-ache, dyspepsia, intra-menstrual peritoneal pains, and spasmodic action of the gall-duct setting up an appearance of icterus. What are we going to do about it? The ovary is suffering no more as a primary cause than does the aching tooth of a pregnant woman act primarily. The tooth does not ache from the presence of a cavity, but from sympathy. Now, shall we turn the woman's stomach into an apothecary's shop, dosing her specifically for each disordered function, combining this with the routine local treatment; or shall we go to work and find out what makes the ovary ache, and then treat the cause? In a rare percentage of cases I will admit that the terminal filaments from the inferior hypogastric plexus within the ovary, have, for some reason unknown to us, taken on diseased action, and have so transmitted their plaint. But such instances are rare, and when they do occur there must be some reason for the nervous and vascular changes. That reason cannot rest within the ovary itself, but it does rest in the chemico-molecular changes in the vessels sustaining its life. It may be objected that the train of symptoms that I have cited belongs to catarrhal salpingitis, with enlargement of the ovary, but I only say that which I know, and that which I have seen I take as evidence of anything that I adduce. Simple tubal disease, non-specific in the nature of its discharge, *does not call for the operation of Hegar*. Gonorrhœal salpingitis, when recognised, can be treated first by dilating the tube with a catheter. If that fail, and the woman's condition is so unbearable that she demands it, then Hegar's operation is justifiable, but not until the full line of treatment which I have often suggested is first given a fair trial. There are a certain number of gynæcological cases which will always demand the skilled hand and clever brain of the surgeon; but the number is not as large as is generally supposed, while the surgeons multiply with wonderful rapidity. I am sure that before long our whole process of combating diseases of the endometrium will undergo radical change, for there cannot be inherent potentiality in the mucous membrane of the uterus to originate so many complex conditions. When we have once found out the true nature of this mucous membrane, when we know surely the *rôle* it plays in menstruation, we shall then arrive at a knowledge of the prophylaxis, pathoanatomy, and etiology of uterine myoma. Even now we are finding out that many uterine myomata will yield to conservative treatment which gynæcology until very lately maintained should be cut out.

Leipzig.

[1] See Möbius, Berl. Klin. Wochenschr., 1884, Nos. 16, 17, 18.

EXCISION OF THE LARYNX.

By W. GARDNER, M.D., C.M. Glas.,
SURGEON TO THE ADELAIDE HOSPITAL, AND LECTURER ON SURGERY IN THE ADELAIDE UNIVERSITY.

JAMES M——, aged sixty, shoemaker, living in a small suburb of Adelaide, was sent to me by my friend Mr. Corbin as a probable case of malignant disease of the larynx, with a request that I would examine him, and do what I could to rid him of his trouble. On Oct. 9th, 1886, I admitted him to the Private Hospital. For the following notes of his previous history and present illness I am indebted to my assistant-surgeon in the Adelaide Hospital (Dr. Ainstey Giles).

"The patient has been a healthy man all his life, and has never suffered in any way except from an occasional cold. He has always been engaged in the same trade, and has not suffered from syphilis or been exposed to hardships of any kind. His father died at the age of eighty, and his mother at forty. He does not know the cause of death in either case. His grandmother (paternal) died at the age of ninety. There has been no disease of an hereditary nature in the family. Two years ago he lost his voice entirely, and it has never returned. Previously to losing his voice he suffered from no throat affection of any kind. The voice gradually became weaker, till at the end of about four months he could not speak above a whisper. He continued in this state until four months ago, when he began to experience a sharp gnawing pain over the larynx, for which he was treated in various ways, but without the least improvement in the conditions. He has had a long course of iodide of potassium, with no result. With the increase of pain he has been rapidly losing flesh, feeling very weak, and during the whole period (four months) has been unable to rest at night on account of the pain, which wakes him up continually. He never had any night sweats. He can take food fairly well, but has no appetite, and swallowing causes slight pain. There is no absolute aphonia."

On laryngoscopic examination both true vocal cords were found to be ulcerated away in nearly their entire length. Irregular white papillomatous nodules were projecting into the centre of the larynx from the sides immediately below the glottis. The false cords and the mucous membrane above were very much inflamed and bulged out by a solid growth underneath, more marked on the right side than on

the left. Arytenoid cartilages not swollen or abnormally red; posterior commissure not thickened. The epiglottis was quite free from the growth, and there was no sign of any disease above the larynx. There was nothing abnormal to be felt externally in the neck, and the glands were not enlarged. The larynx was quite free and movable, but some pain was caused when it was pressed between the fingers. A small piece of the growth was removed with laryngeal forceps and sent to Professor Watson, who very kindly examined it and pronounced it to be a "cornifying epithelioma." On examining the lungs the chest was seen to be barrel-shaped. All over the front and back of the right lung the percussion note was fairly resonant. Over the left lung hyper-resonance was observed. No increase in the vocal fremitus. Respiration harsher than normal all over the chest, and expiration prolonged—more marked on the right side than on the left. No râles, rhonchi, or accompanying sounds of any kind to be heard. Vocal resonance normal. Heart sounds normal. Pulse slow, full, and regular. Arteries not atheromatous. The urine contained neither sugar nor albumen.

On Oct. 12th, at 3.30 P.M., the following operation was performed. The patient having been put under the influence of chloroform, the whole anterior part of the larynx was exposed by making a free incision from the thyroid bone to a point immediately below the second ring of the trachea. The anterior jugular veins were tied in two places and divided between the ligatures, as they interfered with a free dissection. The muscles attached to the side of the thyroid cartilage were thoroughly separated as far back as possible, and the fascia attached to its upper edge was set free without dividing the thyro-hyoid membrane. The hæmorrhage was troublesome and very free, the bleeding from the crico-thyroid artery being very difficult to arrest. Every bleeding point was carefully ligatured, and pressure with hot sponges gradually reduced the oozing. I opened the trachea between the cricoid cartilage and its first ring and at once inserted a well-fitting tube, made of lead, which effectually prevented blood from entering the lung. A flexible rubber tube, about ten inches long, was attached to this, and the administration of chloroform was continued through it. Then, principally with the handle of my knife, I separated the larynx from the œsophagus, divided the superior cornu of the thyroid cartilage, cut through the thyro-hyoid membrane, and finally divided the superior and posterior attachments of the larynx, as close to the cartilages as possible, with a pair of scissors, the epiglottis being cut through at its base. The superior thyroid arteries bled profusely, but were at once caught and ligatured. The patient took the anæsthetic easily, bore the operation well, and showed no signs of collapse. As far as possible throughout the operation the parts were separated by working with the handle of the knife. All bleeding points were ligatured with chromicised Wallaby tendons, which make most excellent ligatures, being strong, safe, and easy to apply. The wound was dusted over with iodoform and covered with absorbent cotton-wool. The tube was securely tied in with tapes passed round the neck and under the axilla.—6.30 P.M.: Slight oozing of blood-stained saliva took place from above the tube.—8 P.M.: An enema of beef-tea and brandy administered, and carbolic acid spray used for five minutes in the room. Temperature 98°.—9.40 P.M.: one-sixth of a grain of morphia injected hypodermically.—12 P.M.: Enema of beef-tea and brandy given. Carbolic acid spray used in the room.

Oct. 13th.—Ordered an enema of beef-tea and brandy every four hours; carbolic spray also used in the room. Temperature 98·6°. Slept well through the night. Slight cough. Pulse 88; respiration 28. Some blood-stained saliva. Wound dressed with absorbent cotton-wool sprinkled with iodoform laid above and below the tube. A piece of carbolised gauze was placed over the orifice of the tube, and the patient raised to a sitting posture. No oozing from the wound. Chest sounds over bases of lungs normal. At 4 P.M. a small red rubber catheter was passed down the œsophagus from the wound in the throat, and through a glass funnel about a pint of milk and lime-water was allowed to flow into the stomach.—9.30 P.M.: Temperature 98·6°; pulse 84; respiration 28.

14th.—Feeding by the œsophageal tube was continued, and also enemata of beef-tea and brandy. The tube was not kept *in situ*, but was easily introduced each time that it was considered necessary to feed the patient. Temperature 98·4°; respiration 21; pulse 92. Skin cool and moist; no pain. Lungs resonant all over back and front; breath-sounds normal. Great quantities of saliva running from the wound. Wound dressed with iodoform and absorbent cotton-wool. Tube keeps in good position and causes no irritation.—3 P.M.: A pint of milk with brandy and lime-water passed into the stomach through the œsophageal tube, causing slight vomiting and some feeling of discomfort. Half the quantity was ordered to be given at a time for the future. Cough troublesome.—9 P.M.: Temperature 98·4°; pulse 84; respiration 22.

15th.—Slept well throughout the night; cough easier. Temperature 98°; pulse 80; respiration 24.—2.45 P.M.: Leaden tube replaced by a silver one of similar shape but rather larger calibre.—9 P.M.: Complains of thirst. Lemon-water given to rinse out the mouth.

16th.—Slept fairly well. Cough rather troublesome. A quantity of thick phlegm was expectorated. Temperature 98°; pulse 80; respiration 18. Wound almost healed above. Copious flow of saliva.

From this date to the 19th the treatment was just the same, and the temperature continued normal, with diminished cough and lessened expectoration of phlegm. The little finger was passed every other day upwards as far as the base of the epiglottis to keep the way open for the insertion of the upper tube of the artificial larynx afterwards. On Dec. 3rd the patient was discharged, and returned to his own home, wearing only the lower tube of an artificial apparatus which had been made for me from the woodcut in THE LANCET, as used by the late Dr. Foulis of Glasgow, and modified from Gussenbauer's original apparatus by Dr. Irvine. In this case, however, the straight tube could not be inserted, and I had the upper one altered so as to assimilate it to Gussenbauer's original apparatus.

On Jan. 17th, 1887, the man re-entered the Private Hospital, and, under chloroform, the upper wound was reopened sufficiently to admit the upper tube, and then the lower tube was passed through it, and the whole tied in with tapes round the neck. The reed used was made of platinum, and, although the note was rather trumpet-like, his words could be distinctly understood on his awakening from the anæsthetic. After the insertion of the upper tube liquids were found to run down whenever he drank, and recourse was had to the soft rubber tube, which was passed down the œsophagus several times a day for feeding purposes. Examination with the laryngoscope showed the silver tube appearing just below the epiglottis, which was very œdematous. Tannic acid spray was ordered, and no examination was made until the end of the month, when it was discovered that there was a small new growth on the anterior pillar of the fauces low down, with a small amount of glandular enlargement of the neck on the same side. As it was evident that the disease had returned, it was decided to remove the upper tube to prevent any irritation, and, as the epiglottis was not acting, to enable him to take food again by the mouth by allowing the upper wound to heal, which it did very rapidly, and on Feb. 5th, being able to take both liquids and solids well, he was sent home again. On the morning of Feb. 11th I again saw the patient, and the growth had increased markedly. He was wearing a tube which I had constructed of silver, like a tracheotomy tube, but with a more abrupt dip into the trachea. This he found exceedingly comfortable, and all he complained of was pain in the right ear. He seemed thoroughly well nourished, and expressed gratitude for the temporary relief afforded him.

Remarks.—This case is interesting as being only the third operated on in the British dominions in which the patient has lived more than four months. The others were operated on by the late Dr. Foulis and Dr. Newman, both of Glasgow. It is not encouraging to find recurrence so rapid after recovery from so formidable an operation, especially as there was nothing to suggest that the disease had passed beyond the confines of the larynx. Of the eighty-three cases which Dr. J. Baratoux has collected, death occurred in half of them before the fourth month. I would draw attention (1) to the ease with which the blood can be kept out of the trachea by the rectangular tube made the full diameter of the normal larynx, and inserted immediately after the division of the trachea, thus lessening greatly the risk of septic pneumonia; (2) that the "hanging head" position is also of immense advantage; and (3) that it is probable, in the great majority of cases, that Gussenbauer's original artificial larynx is the best, although the straight upper tube seems to have suited the late Dr. Foulis' case. In the method of operating I am indebted to the papers of Dr. Foulis and Dr. Newman, and

after consideration I decided to adopt the method of the latter, as being probably the easier and better plan. The interesting discussion at the Clinical Society has induced me to forward my case as a contribution to the subject. If Mr. Butlin's opinion that "complete excision of the larynx for carcinoma should be practised only in very rare instances, as the mortality from the operation is large and the prospect of cure small," is ever to be altered, it must be by attempts to ensure an earlier diagnosis, and in the meantime I indulge the hope that this may be accomplished.

Adelaide, South Australia.

ON THE

ADMINISTRATION OF CARBONATE OF LIME AS A MEANS OF ARRESTING THE GROWTH OF CANCEROUS TUMOURS.

BY PETER HOOD, M.D.

NEARLY twenty years ago THE LANCET published a communication from me on the value of carbonate of lime in the form of calcined oyster-shells as a means of arresting the growth of cancerous tumours, and I am anxious once more to call attention to the subject, and to urge upon those who possess the necessary facilities that a more extended trial should be given to this agent than it appears yet to have received. My own opportunities of employing it in suitable cases have not been large, but the results which I have witnessed have been sufficiently remarkable to justify me in seeking for them a more extended publicity.

In the paper referred to I related in detail the case of a lady nearly eighty years of age who was the subject of schirrus of the breast, and in whom the growth sloughed away and left a healthy surface after a course of carbonate of lime, administered in accordance with a recipe which was current in her family. She manufactured her carbonate of lime by baking oyster-shells in an oven and then scraping off the calcined white lining of the concave shell. The substance thus obtained was reduced to powder, and as much as would lie on a shilling was taken once or twice a day in a little warm water or tea. It was said that perseverance for at least three months was necessary before any good result was to be expected. I presume that the powder would be almost pure carbonate of lime, but it might possibly contain a small admixture of iodine.

The immediate cause of the publication of my paper was a conversation with Mr. (now Sir) Spencer Wells, to whom I related the particulars of the case above mentioned, and of one or two others which had fallen under my notice, and who suggested that the beneficial action of the powder might be due to the lime which it contained. He told me that he had used lime largely in the treatment of uterine fibroids and other tumours, and that he was convinced that processes of atrophy and calcification resembling the spontaneous change or degeneration sometimes observed in them were often produced or promoted by its action. He added that he believed the change commenced in the coats of the arteries by which the tumours were supplied with blood, and that these coats underwent first an atheromatous and subsequently a calcareous degeneration, in either case with a diminution of the calibre of the vessel and a lessened capacity for the conveyance of blood.

After the appearance of my paper I was applied to by several persons with an inquiry as to whether their cases were suitable for the employment of the remedy; but in most of these instances I subsequently found that it had been taken for only a few weeks, and then abandoned because no result was apparent. I should not hope for manifest benefit in any instance under three months of persistent treatment. A notable exception to the ordinary want of perseverance was furnished by the wife of a physician practising at Reading. This lady was the subject of a well-marked schirrus of the breast, which I had myself an opportunity of examining. After a fair and persistent trial of the calcined shell powder for three months, her husband reported to me that "the tumour had ceased growing and that she suffered no pain." She continued to take the powder for several months longer, and for several years her husband paid me an annual visit, always giving the same account, "that his wife never suffered any inconvenience or pain from her disease, the progress of which had been stopped."

The ordinary history of true cancer is such a dismal record of failure, that I think even a few instances in which benefit has been derived from a harmless remedy should encourage the profession to make trial of it in all suitable cases. It would probably be inexpedient, generally speaking, to disclose the nature of the medicine, and the public mind is by degrees becoming permeated by the knowledge that many important medical actions can only be gradually produced. We have no difficulty in inducing patients to submit to prolonged courses of mercury in the treatment of syphilis, and there is no reason why they should not do the same in a malady which, if possible, is even more formidable. Up to the present time the narratives of cures of cancer have been chiefly suggestive of errors of diagnosis, and no assurance of the value of any proposed remedy can be obtained until it has been used in a sufficient number of instances to exclude the possibility of such errors having been committed in the majority of them. Although the experience of Sir Spencer Wells with fibroids points to the probability of a beneficial action upon soft and vascular growths, those which I should myself select for the purpose of further investigation would be typical examples of breast schirrus, adherent tumours of stony hardness, attended by retraction of the nipple and lancinating pain. About the nature of such it would seldom be possible to entertain a doubt.

As an example of the uncertainty which may overhang the true characters of growths which do not present the symptoms above described, I may mention that I was once consulted by a lady living in the north of England, who had a swelling in her breast which had been pronounced to be cancer by her family medical attendant, and also by two consultants called in from the neighbouring county town. She was urged to submit to an operation, but, before consenting, she came to London for further advice. She paid separate visits to Sir James Paget, to the late Mr. Skey, and to me. I was the first whom she visited, and I gave an opinion that the tumour was a harmless one and might be let alone. Her second visit was to Mr. Skey, who said without hesitation that it was a cancer, and advised removal. Her third visit was to Sir James Paget, who said that the growth was innocent. It was let alone, and the patient has had no further trouble from it for twenty years.

Again, I was lately consulted about the case of a well-known nobleman, who had a soft growth in the front of his chest over the upper part of the sternum, which quickly attained a considerable size, and was pronounced to be malignant by eminent authorities. It disappeared entirely under a course of small doses of the perchloride of mercury.

It is therefore not in cases which admit of any reasonable doubt of their nature that I would desire to urge a trial of the lime powder upon the profession. There are hundreds of instances of unmistakable cancer in which an operation, if performed, may perhaps for a time diminish suffering or may prolong life, but in which it cannot afford any well-grounded hope of restoration to health. For all such I would say that the lime ought to be persistently and fairly tried. It can do no possible harm, it need not interfere with any remedies for the present relief of pain, its action can be referred to a perfectly intelligible and probable hypothesis, and it has been of unquestionable utility in a sufficient number of cases to warrant us in reposing some confidence in its use. We have a great hospital devoted to cancer, and cancer wards in others also; and I think the time has come when this simple means should be fairly tested by the profession. It is not long since we witnessed an extraordinary eagerness to try the Chian turpentine, which was so much extolled by Dr. Clay, and in support of which the *prima-facie* case was nothing like so strong as that in favour of the remedy to which I desire once more to call attention.

Seymour-street, W.

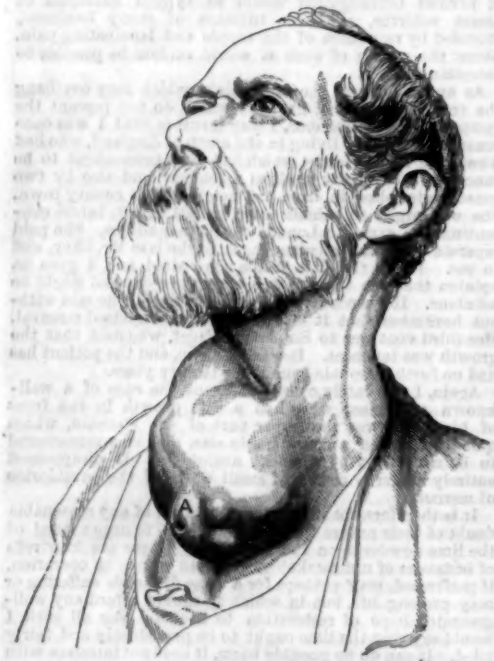
ASSOCIATION OF SANITARY INSPECTORS.—On the 23rd ult., at a well-attended meeting of public sanitary inspectors at Liverpool, it was decided to form an association for the north-western district. A provisional committee was formed to give effect to this resolution, and Mr. A. Taylor, inspector of Wallasey, was appointed temporary secretary and treasurer.

DIFFUSED INNOMINATE ANEURYSM.

BY J. G. BLACKMAN, M.D. BRUX., M.R.C.S., &c.

THE great interest and importance attaching to aneurysmal disease of the innominate artery, and its comparative rarity, induce me to record the following case, which I think particularly shows the impossibility of diagnosing the actual limits of the disease in this class of cases, and the risk in operating lest the available vessels be atheromatous.

William W——, aged sixty, shipwright, first came under my care four years ago, suffering from hæmorrhoids. As he was losing a rather large quantity of blood after each stool, and was much weakened in consequence, I proposed their removal to him, to which procedure he assented. Upon examining his heart preliminary to the administration of an anæsthetic, a somewhat loud systolic bruit was heard over the aortic area. To be on the safe side it was decided to operate without anæsthesia, which was accordingly done, and the patient made a quick recovery.



He, however, shortly afterwards again consulted me, complaining of obscure pains in the chest and back, which he said quite unfitted him for his work; and in accordance with his wish the authorities of the dockyard granted his superannuation. On examining his chest again, I could discover nothing abnormal except the bruit previously mentioned, and the subjective symptoms seemed quite out of proportion to the objective. I was, however, able to afford him some relief by the administration of anodyne drugs, and after a time I quite lost sight of him. This respite was, however, not destined to last long, for in November, 1885, he once more came to me, this time complaining of a swelling in the neck in addition to his other troubles. On examination, I discovered a pulsating tumour, the size of a large walnut, situated immediately behind the right sterno-clavicular joint. He did not complain of much pain. The right radial pulse was full and strong, while the left was small and weak. The right carotid pulse was weakened. In spite of the anomalous condition of the radial pulses, I felt sure I had to deal with an innominate aneurysm, probably complicated with aortic disease. I saw him in consultation with several medical friends, who, with myself, deemed operative interference unadvisable, considering the probable general diseased condition of his arteries, and also the possibility of its being aortic. I prescribed a spare diet with absolute rest, and gave a mixture containing iodide of potassium with morphine. The second injunction he refused to obey, and persisted, in spite of repeated warnings, in taking long walks and occasionally doing a little gardening. Under these adverse circumstances the tumour steadily increased until about three months before his death, at which period it began suddenly to enlarge very rapidly, and at each visit I noticed a decided difference. The dimensions it attained are well shown in the accompanying woodcut, which is from a photograph taken a month before death by Mr. Newby, F.R.C.S. Eng. It will be noticed that the surface is very uneven, and appears, as it were, "pointing" in several places, one of which (marked A) became very thin and developed a black crust on its summit, which eventually came off leaving an ulcer, the base of which seemed to be entirely composed of cellular tissue. This condition caused me great anxiety, as it gave one the idea that the next pulsation must burst the apparently thin tissue. Fortunately this event did not happen, for although the ulcer spread to the size of a florin and bled to a trifling extent, it gradually became drier, and the poor fellow died from exhaustion, and in part possibly from suffocation, on Dec. 7th, 1886, having only taken to his bed during the last week of his long illness.

Necropsy.—The wall of the sac was of varying thickness, being at the most not more than from three-eighths to half an inch, and in some places was extremely thin. The arterial coats could not be distinguished, and there was scarcely any attempt at lamination. A small clot of fibrine was found in the interior, surrounded with dark, semi-coagulated blood. On tracing the sac, it was found to pass in all directions. To the outer side, it communicated with the right subclavian artery, and upwards with the carotid artery of the same side; whilst to the inner side it passed across the trachea, œsophagus, left carotid, and subclavian arteries. Downwards, it had passed over the clavicles and sternum, eroding the sternal ends of the former bones and the upper part of the first piece of the latter bone. Backwards, it had pressed upon and displaced both the trachea and the œsophagus. The aorta was found to be considerably dilated and atheromatous, the disease involving the whole of the arch and the commencement of the thoracic portion. On passing the finger along the interior of this vessel, one discovered the opening corresponding to the innominate artery, which communicated directly with the aneurysmal sac; the atheroma here appeared to be less marked. Passing the finger along still further, the openings of the left carotid and subclavian arteries could be made out, the former being a mere chink, whilst the latter was of natural size. Both openings were, however, rigid, and surrounded by atheromatous calcification, and gave the impression of being foramina in bone. The coats of both carotids and subclavians were more or less diseased. A further inspection was not permitted by the friends.

Portsmouth.

MALIGNANT DISEASE OF RIGHT LUNG AND POSTERIOR MEDIASTINUM, PRODUCING COMPLETE PARAPLEGIA.

BY FREDERICK J. SMITH, M.R.C.P., M.B. OXON.,
MEDICAL REGISTRAR TO THE LONDON HOSPITAL.

BY the kindness of Dr. H. G. Sutton, under whose care the patient was in hospital, I am enabled to publish the following case, which presents somewhat rare and peculiar features.

B. C——, aged forty-five, was admitted into the London Hospital on June 1st, 1886, complaining of pain in the right side and numbness of the legs. Family history very good. He has been engaged as stevedore and coal-porter all his life, and until three years ago had always enjoyed good health. Is a moderate drinker, never exceeding three pints of beer a day. Three years ago he had severe pain in the chest and slight cough, and is said to have been treated for pleuro-pneumonia. Ever since then he has had pain in the

right side, and latterly, he says, the lower part of the abdomen and lower extremities have felt numbed.

Condition on admission.—Looks well, but is of a melancholy disposition, and cannot sleep on account of the pain. He states that he perspires freely, but not on the right side. Digestive system fairly good. Respiratory system: Has a slight cough; physical signs normal, except at right base, where there is dulness, deficient breath sounds, increased vocal fremitus, and pain on movement. Vascular system healthy. Nervous system: Knee jerks equal, and not remarkable; plantar and other superficial reflexes present, and about normal in freedom. The patient does not seem fully cognisant of sensations of heat, cold, and pain. Able to walk, but not well.

The following is a short abstract of the daily notes from the date of the patient's admission until his death:—June 7th: Unable to pass urine; when drawn, found to be alkaline; complains of much pain in the bladder; cannot stand without support.—16th: Passed a motion involuntarily; knee jerks exaggerated; unable to move either leg.—21st: Entirely unconscious of lower extremities.—30th: Legs contracted; commencing gangrene of right heel.—July 19th: Since last note, pain in right side and also pain referred to legs have been the chief symptoms.—22nd: Gland projects at inner end of right clavicle; a bedsore has formed, and is extending rapidly; right leg very sensitive; temperature very variable.—Nov. 1st: In this interval the chief notes are a progressive loss of strength, and complaints of pain in chest, together with a most distressing cough.—29th: Pain of a girdle character and in left side very distressing.—Dec. 14th: Troubled with "fits" and fainting.—Jan. 12th, 1887: Continued to get weaker, and died quietly without any further definite symptoms.

Necropsy.—Body much wasted. On opening the thorax, a large mass was at once apparent, occupying the right upper part of the posterior mediastinum. On further exploration it was found that the new growth had extended into the base of the right lung in a downward direction; upwards, it had infiltrated the glands of the posterior mediastinum, thus producing the bulging above the right clavicle; backwards, it was found to have softened and infiltrated the bodies of two or three of the upper dorsal vertebræ, and to have compressed the spinal cord to such an extent as to have almost obliterated it opposite the fourth dorsal vertebra, with complete softening above and below this point for some little distance. The growth had apparently begun in the neighbourhood of the right bronchus, as here it had softened down into a mass of cheesy, purulent material. The kidney showed acute pyelitis, and the bladder evidence of cystitis. The other organs presented only such changes as might fairly be attributed to the mode of death. The naked-eye appearances of the growth showed that it was an encephaloid, or soft cancer, with much juice and very little fibrous stroma.

Remarks.—The above case is interesting from one or two points of view. Primary cancer of the lung (be it remembered that so careful an observer as Dr. H. Sutton performed the post-mortem examination, and found no other cancerous deposit) is in itself a somewhat rare affection, and it must be rarer still to find examples of a soft cancer in such an important organ as the lung which took three years to kill. I say three years, for unless we take the illness of three years ago to have been the commencement of the growth we have no other possible explanation of its origin. Clinically, the case was one of extreme interest, owing to the difficulty of diagnosis. On admission the signs in the lungs were such as to give one no clue whatever as to the dangerous nature of the case, nor did the nervous phenomena lend us much aid, for, though the paraplegia was somewhat marked, the signs of spinal cord disease were absent or ill-defined. After a week's stay in hospital, however, the signs of acute myelitis rapidly developed, and then, indeed, the case assumed a most serious aspect. But still the diagnosis was anything but absolutely certain, and not till the end of July, when the enlarged gland appeared above the clavicle, could an almost positive conclusion be drawn as to the nature of the case. I can find no mention in ordinary text-books of this particular cause of paraplegia and myelitis—i.e., growth from the lung. I presume the reason is that such growths usually kill before spreading in that direction. The growth appeared not to have infiltrated the cord at all, but merely to have compressed it. I regret to say that a microscopical examination has not been made.

West-street, Finsbury-circus.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET.

CASE OF SUPRA-PUBIC LITHOTOMY; HÆMORRHAGE INTO THE BLADDER; RECOVERY; REMARKS.

(Under the care of Mr. J. H. MORGAN.)

NUMEROUS instances of successful operation for the removal of calculus by incision into the bladder above the pubes have been recorded during the last few months. The following case, however, is one in which an unusual complication occurred during treatment, and the account of it, with the remarks of Mr. Morgan, and his explanation of the mode of occurrence of the hæmorrhage, will be read with interest. For the notes of the case we are indebted to Dr. Penrose.

W. G——, a boy, aged six years and a quarter, of healthy aspect, and with no history of previous illness, was brought to the hospital on account of passing blood with his urine, and of pain in micturating. This had existed for two years. Eight months previously he had been circumcised at another hospital. The boy had always lived in London. The mother's family was gouty. The pain and blood followed micturition, and both were worse after exercise. The patient had to rise at night to pass urine. The urine after admission was slightly alkaline, without any albumen. A stone was detected on sounding, which it was decided to remove by the supra-pubic operation.

The patient having been placed under chloroform, a small gum catheter was passed and the bladder emptied of urine; it was then filled with a moderate quantity of boracic lotion, the catheter plugged, and an indiarubber band placed round the penis to avoid leakage by the side of the catheter. A tampon was passed into the rectum and distended with air until the bladder could be seen in outline upon the abdominal surface projecting with moderate prominence. An incision about an inch and a half from just above the symphysis was made in the middle line and the dissection carried down to the fat overlying the bladder, in which one vessel was tied before division. The wall of the bladder being exposed, it was incised, the finger passed in, and the stone immediately detected. This was of moderate size, and was extracted with the aid of forceps. The muscular coat of the bladder was then sewn up by inserting a number of separate fine catgut sutures, the mucous coat being avoided. The wound in the abdominal wall was then united by silk sutures and a small horsehair drain inserted at the lower angle. The stone was composed of uric acid. The catheter was allowed to remain in the bladder.

On the following day the wound, which was dressed antiseptically, looked perfectly quiet. The boy was well, and the temperature normal. Urine, slightly blood-stained, passed through catheter. On the second day the catheter was removed, as it was causing some urethritis, and urine was passed per urethram. The drain from the wound was also removed. On the third day the patient was restless, and complained of pain. The quantity of urine passed was small, and was slightly stained with blood. More was drawn off by catheter. There was a good deal of straining, and, thinking that this might be due to constipation, an enema was administered by the house-surgeon. Pain increased; no sleep. Ordered two minims of tincture of opium. Temperature normal. On the fourth day after the operation, the patient was pale, and the surface cold. The bladder was seen and felt distended up to the umbilicus, hard and tense, but not tender. To relieve this, which was evidently due to the presence of blood, a catheter was passed, and some warm boracic lotion injected. This was repeated several times, the instrument when withdrawn being filled with clotted blood, the fluid dribbling away mixed with blood. The boy slept between three and four hours.

During the following night several ounces of blood-stained fluid were passed, and the bladder became softer and less distended. The injections were repeated, with the result of bringing away much more fluid and some clots. The swelling of the bladder was much diminished. On the sixth day the bladder swelling had disappeared, and a good quantity of blood-stained urine was passed naturally. The wound, which up to this time had looked firm and healthy, now showed some oozing, and there was marked tenderness in the right inguinal region. Three stitches were removed, and later in the day urine passed from the aperture. On the seventh day almost all the urine, which was slightly blood-stained came through the wound. The tenderness in the inguinal region was less marked, but there was observed a dark-coloured defined area of skin over the right pelvic region and extending a short way below Poupart's ligament, which was evidently caused by extravasation into the tissues of blood-stained urine. Boy improving. In a few days this staining disappeared, and the amount of urine passing from the wound began to gradually diminish as that flowing from the urethra increased. Healing was complete in the course of another four weeks, and the boy was discharged, but on coming to see Mr. Morgan a short time afterwards he was reported again to have passed some blood with the urine. This, however, has not recurred, and he is now perfectly well.

Remarks.—Any *contretemps* in the progress of a case which follows an operation which may be said to be still on its trial deserves to be recorded, and the above case illustrates two points to which attention has already been drawn. In the first place, it is not desirable, at all events in the case of children, to retain a catheter in the bladder after the suprapubic operation. Although for the first forty-eight hours the urine passed through the catheter, and was therefore not allowed to remain in and thus distend the bladder walls, the urethritis excited by the presence of the catheter was probably the cause of the bladder subsequently becoming distended, and so tearing apart the freshly united edges of the incision and giving rise to the hæmorrhage into the bladder which produced so much tension. It was this also which caused the stitches in the bladder to give way, and had they not been inserted the hæmorrhage might have made its way out by the wound in the abdominal walls and the distress which followed the distension of the bladder avoided. The staining of the tissues about Poupart's ligament on the right side is an interesting feature, and shows that a small amount of extravasation need not lead to any bad results.

NEWCASTLE-ON-TYNE INFIRMARY.

JAW CASES.

(Under the care of Mr. PAGE.)

THE cases were reported by Mr. J. P. Maynard, house-surgeon.

CASE 1. *Epithelioma of the lower jaw.*—Rebecca E——, aged fifty-two, a woman with marked cachexia and much run down, was admitted on May 22nd, 1886, with epithelioma involving the floor of the mouth. Three months previously she had noticed a painful ulcer on the frænum linguæ, which gradually spread rather rapidly over the tongue and floor of the month, with much pain and salivation. Shortly afterwards a swelling appeared beneath the chin.

On admission the floor of the mouth and under surface of the tongue were found to be occupied by an irregular ulceration, with uneven sloughy floor, indurated margins, and binding the tongue down all round as far as the first molar tooth on either side. It involved the lower jaw to a similar extent. All the submaxillary glands were much enlarged, but not adherent to the skin.

As the woman was suffering terrible pain, shooting along both sides of the head, was emaciating rapidly from inability to eat, and was willing to have anything done, Mr. Page, under chloroform, split the chin to the hyoid bone, reflexed the flaps, sawed through the lower jaw on either side by the first molar tooth, and, after passing a silk ligature through the base of the tongue, removed the whole tongue with scissors and dissected the glands out. The linguals were easily secured, and the skin brought together with a fine continuous catgut suture, the ends of the silk ligature, used to hold the stump of the tongue, being brought out through the bottom end of the wound and secured on the chest by strapping; this kept the stump from falling back upon the glottis, and was found useful more than once when that accident threatened.

The woman recovered well from the shock of so severe an operation, and the wound was kept sweet by washing it out frequently with weak Condy. She was fed by enemata the first three days, and by the mouth afterwards. Her recovery was complete; the pain left her, and by degrees the divided ends of the jaw came into apposition, so that she looked like a person with a small retreating chin. She was kept under observation, and on Nov. 1st the following note was made:—"Pain recommenced lately, shooting up left side of face, and swelling appeared below the chin on the left side; mouth healthy.—20th: Ulceration commencing on gum of left half of jaw. Stump of tongue healthy; glands increasing. Some cough.—Dec. 10th: Woman bed-fast; sinking."

CASE 2. *Encephaloid cancer involving lower jaw.*—John H——, aged fifty-six years, married, admitted Nov. 9th; a hard drinker and smoker; no history of syphilis. Twice had toothache ten years ago on the right side, accompanied by swelling. Four months ago he found a small tumour growing from the gum on the right side, with a pedicle. This he removed frequently as it recurred, and then swelling began below the right jaw, without pain, and has increased gradually since. Losing flesh.

On admission the right cheek was found prominent, and the swelling extending into the neck. Surrounding and adhering to the right lower jaw, reaching from the lateral incisor anteriorly as far back as the wisdom tooth, and bulging up on the inner and outer sides of the intermediate carious and loose teeth, was a mass of growth composed of hard, lobulated, elastic material, looking like bunches of large ripe cherries, bright-red in colour, smooth on the surface, and superficially ulcerated in a few places. Occupying the submaxillary space were three large hard glands, adherent to each other, but not to surrounding structures, and passing beneath the sterno-mastoid muscle. The cheek was free, so was the tongue and its movements, though the growth invaded the floor of the mouth.

Mr. Page performed a preliminary laryngotomy, plugged the pharynx with a sponge, and then making an incision along the lower border of the jaw as far as the ear, and in front not quite dividing the lip, he sawed through the jaw by the lateral incisor tooth and turned the jaw upwards and removed it at the joint, afterwards easily shelling out the glands. Hæmorrhage was easily arrested, and the wound stitched with continuous suture of catgut, drainage being allowed for at the angle of the jaw where bagging seemed likely to occur. The wound healed well, some facial paralysis that occurred passing off, as also slight cellulitis of the face that followed. The laryngotomy tube was removed the next day, and the wound healed well. It was intended to keep the tube in and to plug the pharynx, but the sponge excited vomiting and had to be stopped. The growth proved to be encephaloid cancer.

Jan. 20th.—Patient stationary. The recurring attacks of cellulitis (?) have left an "elephantoid" thickening of the cheek.

March 10th.—Growth returning.

CASE 3. *Epithelioma.*—James C——, aged fifty-three, admitted on Oct. 30th, 1886. He suffered from epithelioma of the cheek in August, 1885, which was excised. Ten weeks previously to admission it returned, and has increased.

On admission, the growth involved the whole thickness of the cheek at the angle of the lower jaw and the jaw itself. It had recurred inside the cheek, and was making its way to the skin, which was reddened. The mouth could only be opened half an inch in front, when the inside of the cheek at the angle of the jaw was seen to be ulcerated. No enlarged glands in the neck. On Nov. 17th the skin burst, after which the growth seemed to diminish somewhat in size.

On Nov. 27th, at the patient's urgent request, Mr. Page operated, making a double elliptical incision extending from the angle of the mouth nearly to the lobule of the ear, and including the ulcerated surface. He sawed through the jaw outside the canine tooth and across the ascending ramus, removing the intermediate portion. In order to bring the edges together without the tension there must otherwise have been, a curved incision was made about three-quarters of an inch below, and parallel to the lower one previously made, as in the principle of cheilo-plasty, and then the two incisions sutured, three hare-lip pins being used. The man did well, and, though two of the pins cut partly through, the wound healed up.

Jan. 26th.—There is no return of the disease.

Feb. 16th.—Since going out the cheek has gradually becombe œdematous and indurated (as in Case 2).

April 6th.—The growth is recommencing inside the mouth at the old seat. The cheek still remains elephantoid. No pain, and still eats well.

CASE 4. *Sarcoma involving the upper jaw.* — James S——, aged fifty-nine, young for his age and healthy, was admitted on Oct. 1st, 1886. Six months ago he noticed a swelling on the right cheek close to the nostril, the size of a pea. It grew slowly without pain. Never had any discharge from the nose.

On admission the angle between the nose and cheek on either side was occupied by a swelling as large as two walnuts, fixed, elastic, and attached to the superior maxilla on the right side, not adherent to the skin or encroaching on the orbit. On raising the lip it appeared as an elastic red swelling, distorting neither alveolus nor palate. It fills up the right nostril, and its nasal surface is superficially ulcerated, bleeding when touched. There are no enlarged glands in the neck. On puncture a drop of blood escaped.

On Oct. 19th Mr. Page operated, raising the upper lip by cutting through it into the right nostril. Sawing through the upper jaw on either side beyond the lateral incisor tooth, he forcibly removed the inter-maxillary bones with the growth. The growth proved to be a round-celled sarcoma. The case did well, and the deformity was *nil*, his voice having a nasal twang, and occasionally fluids returning through the nostrils while drinking.

On Jan. 31st, 1887, he returned with a recurrence at the seat of removal and in what remained of the right upper jaw. On Feb. 1st the upper jaw was removed, and the antrum was found to be filled with the growth. The man had erysipelas of the face and a mild attack of pneumonia (no preliminary laryngotomy had been performed), and an abscess formed subcutaneously in the left arm. He also had a purulent discharge from both middle ears. These abscesses gradually healed, but his recovery was retarded by a fresh attack of erysipelas lasting some days, and leaving behind it a thickened state of the cheek, as in Cases 2 and 3. On March 26th he was discharged, with evidence of a return of the growth.

CASE 5. *Encephaloid cancer, involving the upper jaw.*—Mary H——, aged fifty-nine, widow, was admitted on Oct. 28th, 1886. Seven months ago she felt pain followed by swelling over the right malar bone. It increased slowly, spreading towards the orbit. No pain in mastication (teeth all lost some years ago), and no discharge from nose and mouth.

When admitted the right face was very prominent; skin reddened and partially adherent. The upper jaw, malar, and half of zygoma were covered by a hard growth, soft in places, which displaced the eyeball upwards, filled the temporal fossa (anterior half), and covered the masseter muscle (upper half), bulging into the mouth between the upper teeth and cheek. No glands enlarged, and the patient had been losing flesh.

On Nov. 6th, on the patient's urgent solicitation, Mr. Page raised the skin by the incision recommended by Mr. C. Heath, and, after dividing the zygoma and nasal process of the upper jaw with bone forceps, sawed through the alveolus from the nostril and avulsed the upper jaw and mass entire, dissecting up the orbital structures from the floor of the orbit. The large chasm bled profusely, but soon stopped with pressure, and the skin flap was brought down with a continuous catgut suture. It healed well, and the woman went home early in December. Her face, which previously had a very anxious and pinched expression, assumed quite a cheerful look. The growth proved to be encephaloid cancer. She came up on January 15th, when there was no sign of any recurrence, though the eyeball appeared in danger of disorganisation. In the beginning of April the growth recommenced at the seat of removal.

CASE 6. *Myxoma involving the upper jaw.*—James M'K——, aged seventy-five, was admitted on Oct. 30th, 1886. Six years ago he noticed a small growth like a raspberry protruding from the socket of one of the left upper molar teeth. He used to remove it with his finger-nail, but it gradually grew too firm and extensive for this. He is a hale and hearty man, looking about fifty-five. There is a growth about the size of a hen's egg attached to the left upper alveolus, red, elastic, and fairly soft. It consists of two parts, the interval between them leading through the tooth socket into the antrum. Under chloroform the growth with a portion of the alveolus was removed. It proved to be a myxoma.

Jan. 20th.—There is a small piece of the growth projecting through into the mouth the size of a pea. He had no pain, and it is uncertain whether it is returning.

March 20th.—The projecting portion is not increasing, and he suffers no inconvenience from it.

CASE 7.—*Sarcoma of the upper jaw.*—J. R——, aged sixty-eight, was admitted on Feb. 24th, 1887. Eighteen years ago he had mucous polypi removed from the nostrils. Last December he felt pain and swelling over the right cheek, which had increased pretty rapidly. Has lost flesh. He is a hearty, strong old man. The interval between the nose and the right cheek is filled up with a swelling, which encroaches upon the floor of the orbit above, passing over, not through, the bone, pushing the eyeball upwards. Below, it bulges in the angle between the cheek and the gum; and inside, it presents in the nose as a red vascular surface. It is elastic and tender; a needle draws off blood only. There are no enlarged glands in the neck. The finger detects a hard lobulated growth projecting through the posterior nares. All organs healthy.

On March 1st Mr. Page removed the entire upper jaw. The growth proved to be soft sarcoma, filling the antrum and the right half of the nose. The patient did well after the operation, and on the 31st went home perfectly well.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Destructive Arthritis of Knee without Suppuration.—Senile Arthritis.—(?) Sarcoma of Knee.—Carcinoma of Spine and Liver.—Diffuse Sarcoma of Spinal Pia Mater.—Interstitial Aneurysm of Inter-auricular Septum.—Tubal Pregnancy.

AN ordinary meeting of this Society was held on Tuesday last, Sir James Paget, Bart., President, in the chair.

Mr. S. G. SHATTOCK read the report of the Morbid Growths Committee on Dr. Edmunds specimen of Horny Papilloma of the Hand, from which it appeared that there was no evidence of genuine malignancy. The necrosis had extended over a period of two years; there were no lymphatic enlargements, and although the operation had been performed twelve months ago, there were no signs of recurrence.

Mr. HUTCHINSON showed a specimen of Dry Arthritis in which there had been an unusual amount of absorption. It came from the limb of a head mistress of a large school, aged forty-five, who had suffered from extreme pain for some time. The tibia was displaced backwards and outwards, but there was no real periosteal thickening. The leg was amputated. The whole of the cartilage was absorbed, and there was much wasting of the femur and tibia without any suppuration, necrosis, or material softening of bone, or, indeed, any fluid effusion. It was not a case of Charcot's disease; there was no evidence of locomotor ataxy; rheumatism was out of the question.

Mr. THOMAS SMITH showed specimens of Acute Senile Arthritis of Tubercular Nature. The first came from a lady aged sixty-seven. She had suffered much from pain in the ankles and knees. Last November she was suddenly seized with severe pain in one knee, which rapidly filled with fluid and the limb became deeply ecchymosed; the body temperature fluctuated between 100° and 103°, and the pulse between 150 and 160. The patient was most unmanageable. In March amputation was performed and recovery followed. The amputation was through the lower third of the thigh. Over the joint surface subject to pressure the cartilage was absorbed; the synovial membranes were thickened and thrown into processes and fimbriæ; there was no sign of ulceration or suppuration. Mr. D'Arcy Power made a microscopical examination, and found miliary tubercle, but not bacilli. The family history showed a marked degree of tubercle in many relatives. A second case occurred in a man aged seventy. The wrist-joint had been affected for two or three months with great swelling; open sinuses had formed, and necrosed bone could be detected through them. The end of the ulna was laid bare and dead. A profuse discharge of pus flowed from the joint. Albuminuria (one-fourth) was present. Amputation through the forearm was followed one month afterwards by death from the effects of chronic heart

disease. The joint was much destroyed; the ligaments had given away; the bone was much necrosed. The cases were illustrations of senile struma as recognised by Sir James Paget some years ago, though he gave no evidence as to the microscopical presence of tubercle.—Mr. R. J. GODLEE mentioned the case of an old man with extensive disorganisation of the wrist-joint, in which caseous material was discovered.—Mr. F. S. EVE said that Dr. Lediard had shown a specimen closely resembling Mr. Hutchinson's case.—Mr. MACNAMARA thought there was clear evidence of the existence of degenerative changes due to trophic nerve influence, and yet not a genuine case of Charcot's disease. He had published a case of distinct and definite tubercular disease of the joint, but there were no bacilli.—In reply to Mr. Smith, Mr. HUTCHINSON said that the chronic disease had lasted many years, but the acute destructive disease only three or four months; a microscopical examination had not been made, but there was no evidence of tubercle. He had seen many cases of what he diagnosed as struma in people above the middle age since the publication of Sir James Paget's.

Mr. HUTCHINSON showed a specimen of Tumour of (?) Syphilitic nature. A swelling appeared on the inner side of the left knee-joint of an officer in the Indian army. There was a history of chancre, but no conclusive proof of syphilis. Iodide of potassium failed to effect real improvement. The skin over the tumour was healthy; no nocturnal pain. Mr. Hutchinson thought it most probably was a syphilitic gumma, and iodides of sodium, potassium, and ammonium were given in large doses, and afterwards mercury to full ptyalism, but all without effect. Consultation with Sir James Paget was followed by exploration, and finally amputation of the limb. A soft opaque whitish structure like a sarcoma was found beneath the vastus, and then much grumous fluid was discovered and a bare patch of bone, but there was no ossification of the tumour. The knee-joint was involved. The growth, the size of a fist, was attached above the inner condyle; a central cavity contained glairy fluid and extensive erosion of bone over a surface of about three inches in diameter. Several weeks' treatment with iodide and mercury had previously failed to reduce the swelling. The growth was well defined by fibrous tissue, and to a large extent was made up of this, with collections of round cells at various points. Great numbers of vessels were present, many of which were more or less obliterated by thickening of their walls. Some new formation of cartilage and bone had occurred at the margin. The thickening of the vessel walls by cellular infiltration, together with the erosion of bone, pointed to a specific origin; but the failure of treatment, the absence of any marked gummatous deposit (though some parts were degenerated) were against this hypothesis. Mr. Hutchinson said that two cousins and an uncle had died of cancer. He had never seen a gumma having the naked-eye characters of the tumour in question, nor one which so persistently refused to be cured by specific treatment.—Sir JAMES PAGET said that he had had no serious doubt during life that the growth was a sarcoma, even whilst bearing in mind that mistakes had been made. He thought that tumours expressed themselves as surely in shape and naked-eye characters as they did to the microscope.—Mr. D'ARCY POWER had dissected a similar specimen in a well-marked case of syphilis.

Dr. G. N. PITT showed a specimen of Primary Carcinoma of the Liver, taken from a man aged forty-eight, who had incontinence of urine for two years, and died with paraplegia. There was a large liver weighing 120 ounces, and section of it showed a large white growth of elastic consistence, with forty or fifty secondary growths around. Deposits were found in the kidneys, lungs, and suprarenals. As a unique occurrence, it was found that the eighth dorsal vertebra was entirely replaced by carcinoma. It was probably of scirrhous nature, and primary in the liver, perhaps originating in the bile ducts. Several similar cases have been recorded in the Pathological Transactions. Numerous prostatic calculi were found, and possibly this was related to the enuresis. There was also a mass of growth in Douglas's pouch.—Mr. GODLEE said that Mr. Kesteven had recorded a case of sarcoma, in which one vertebra was completely replaced.—Dr. NORMAN MOORE had never seen a vertebra so completely substituted.—Mr. LAWSON TAIT related a case of papillomatous disease of the peritoneum, from which recovery took place.—Dr. W. S. A. GRIFFITHS said that Mr. Thornton and Mr. Doran had recorded similar cases.

Dr. PASTEUR (on behalf of himself and Dr. COUPLAND) read a paper on two cases of diffuse sarcoma of the spinal pia mater. Case 1 was that of a female aged twenty-two, whose illness began in June, 1885, with headaches and pain in the right shoulder and arm. In September there was severe pain along the spine. On admission to the Middlesex Hospital, on October 7th, 1885, there was impaired memory, paresis of arms and legs, without loss of sensibility, abolition of knee-jerks, and severe pain along the spine and in the occipital region. There was intense double optic neuritis, impairment of vision, and complete paralysis of both external rectus muscles, with simple diplopia. The patient died comatose on the second day after admission. The spinal cord was found ensheathed in its whole extent by a softish grey mass of new growth, most developed on the posterior and lateral aspects. It was situated beneath the arachnoid and was inseparably united to the pia mater. In an upward direction it spread over the pons and medulla, completely investing the sixth pair of cranial nerves, and had extended in the form of isolated nodules to the parietes arachnoid in several places. Downwards the growth had invested the nerves of the cauda equina with thin translucent sheaths, which at intervals expanded into small tumours. The nervous tissues presented normal naked-eye appearances. Microscopically, the growth consisted of closely aggregated small round cells with a small nucleus embedded in a stroma for the most part obscured by the luxuriance of the cell growth. The growth invaded the white matter of the cord at several points, mostly along the lines of the normal trabeculæ. The nerve tissue of the cord showed no pathological changes. Case 2: A girl, aged four years and a half, under the care of Dr. H. C. Bastian. Her symptoms dated from a fall down a flight of steps two months before admission to University College Hospital. The chief symptoms were strabismus, paresis of the legs and arms, and blindness of sudden onset, fourteen days before admission. There was also severe pain in the back and marked weakness of the trunk and muscles. Sensibility was unaffected. Death took place by asphyxia seventeen days after admission, without convulsion. The spinal cord was surrounded by a thickish layer of new growth, especially developed on the posterior aspect. The growth reached upwards to the under surface of the cerebellum, which it invested and infiltrated to the depth of about half an inch. The middle lobe of the cerebellum was almost entirely replaced by new growth. Microscopically, the growth presented appearances almost identical with the previous case, which were rare, and seemed to form a group apart from other kinds of growth in the spinal membranes. Only three cases in which the growth might be presumed to be primary in the spinal pia mater were on record. The notable points in the group of cases were: The extreme diffusion of the new growth, which involved the whole spinal pia mater; the type of tissue, approximating closely to inflammatory tissue, but distinguished by the absence of any tendency to become organised or to undergo retrogressive changes; the limitation of the growth to the spinal pia mater; the age of the patients—four and a half, sixteen, and twenty-two years respectively; the brief duration of the symptoms—about three months in each case; the absence or impairment of knee-jerk and other reflexes in connexion with the involvement of nerve roots; the absence of convulsions; the presence of constipation; the presence of fundus changes in the two cases in which the disease reached the brain. The cause of death in all the cases was interference with respiration.—Dr. J. A. ORMEROD said that a somewhat similar case had been recorded by Dr. Long Fox in the *Bristol Medico-Chirurgical Journal*.—Dr. HADDEN referred to some cases of a similar kind published as chronic meningitis in the last volume of the Pathological Transactions.

Dr. MAGUIRE showed a specimen of Interstitial Aneurysm of the Inter-auricular Septum. The aortic valve was stenosed, and the cusps much thickened by inflammatory growth and covered with fibrin, in which no micrococci could be found. Anterior to and below the foramen ovale a cyst filled with partly disorganised clot was found, which turned out to be really an aneurysm. There was some ulceration below the aortic valve, which communicated by a narrow fissure with the cavity of the aneurysm. The precise mode of origin was doubtful. As affecting a part of the body rarely the seat of morbid changes, the specimen was of much interest.

Mr. LAWSON TAIT communicated an additional note on the Pathology of Extra-uterine Pregnancy. The theory of extra-uterine pregnancy which he advanced in 1873 has

met with only one objection. His theory, based on the belief that the rupture of the tube was caused by the placenta, it was urged, could not be accepted because the placenta was not differentiated until after the third month, whereas these ruptures generally occurred between the tenth and twelfth weeks. Carpenter said that "the formation of the placenta commences in the latter part of the second month, and during the third the organ acquires its proper character." In fact, according to Goodsir, the changes upon which depend, in Mr. Tait's belief, the ultimate rupture of the tube begins before the end of the first month. He meant the immersion of the fœtal tips in the maternal tissue and the formation of new vessels and the great increment in size of those in previous existence. The ultimate localisation of this immersion for the subsequent differentiation of the placenta is evident long before the completion of the eighth week. All the facts are completely proved by two preparations of the Pathological Series of the College of Surgeons Museum (4691 and 4691*a*). In a post-mortem examination made in 1874, in which he succeeded in perfectly injecting the uterus, ovaries, and tubes, the enlarged maternal vessels at the edge of the placental site were clearly the reason of rupture, and the source of the fatal hæmorrhage. The difference in the uterus and the Fallopian tube in the matter of a contained fertilised ovum is that the uterus has the power of indefinitely increasing the thickness of its walls, whereas the tube has no such power, or has it to a very limited extent. The site of the placenta as a seat of active nutrition, wherever it may be, becomes extremely vascular, as is proved by preparations now exhibited. If the tissue in which this change is effected is also infiltrated by soft villi, naturally of a kind easily torn, and if it does not increase proportionately in strength, it must offer a feeble resistance to the pressure of the rapid growth of the ovum. There are many other preparations illustrating and confirming these points. Dr. Heywood Smith's specimen was removed from the living abdomen as a pediculated tumour, and the conditions were such that it seemed that at last a case had been found that unhinged completely Mr. Tait's theory of extra-uterine pregnancy. This preparation was submitted to a committee for report, which read as follows: "The specimen consists of a fœtus and placenta corresponding to the fifth month of gestation. Also the Fallopian tubes, with the ovaries. The sac containing the fœtus and placenta is made up of involuntary muscle fibre, and resembles in structure the Fallopian tube, portions of which from the same case were cut and prepared for the microscope, and compared with the sac wall. Sections were also taken from an undoubted case of tubal pregnancy which had advanced to the fourth month of gestation. The sections from the two cases were identical. The outer wall of the sac presents pieces of omentum, showing that fairly strong adhesions had arisen between the dilated tubes and the omentum. The Fallopian tube corresponding to the sac, &c., was scarcely represented except by fimbriæ. The corresponding ovary contains a large corpus luteum. There is no evidence of rupture of the tube, and there can be no doubt that the specimen is one of tubal gestation." What, then, is wanted now for the modification or destruction of the author's theory is a preparation of extra-uterine pregnancy which is inconsistent with a tubal origin, or a case of tubal pregnancy which has not ruptured either into the peritoneum or into the broad ligament at or before the twelfth week of ovum life. Dr. Berry Hart dissected a specimen of extra-uterine pregnancy, and subjected it to the process of freezing and longitudinal slicing. It is a case of tubal pregnancy ruptured into the broad ligament, and developed there until at least the eighth month—perhaps longer. Unfortunately, nothing is known of the history, but the fortunate sections cut by Dr. Hart absolutely prove beyond all criticism what he (Mr. Tait) had convinced himself of by the facts observed by him in operating upon these cases—that they are originally tubal, and that they develop in the broad ligament, pushing its layers and those of the peritoneum upwards and backwards and towards the centre. In operating on these cases, sometimes he opened the peritoneum and sometimes not. The reason is made plain by Dr. Berry Hart's sections, where the uterus is central. The growth of the pregnancy has stripped the tubal and peritoneal layers and carried them upwards, but a moment's consideration will make one conclude that the peritoneum could be stripped off the posterior wall by the uterus only; it could not be shifted from the anterior wall of the uterus and bladder, though these were pulled well up. But immediately on each side of the uterus the peritoneum has been shifted off the transversalis fascia as far up as the umbilicus, leaving a long conical tube of the peritoneal cavity reaching down over the median line of the fœtal mass as far as, and corresponding in diameter to, the uterus. In some cases the uterus was central, but in the majority it was not. Dr. Berry's Hart's drawings showed why it was that sometimes the peritoneum was opened and sometimes not. When this peritoneal tube was central, it was opened; when it was not, Mr. Tait missed it: so that these operations were sometimes to be ranked as abdominal sections and sometimes not. He submitted also sections of the tube in early tubal pregnancy, showing the immersion of the fœtal villiin to the tissue of the Fallopian tube, and the consequent enlargement of the tubal vessels.

The following card specimens were exhibited:—Mr. E. H. Fenwick: Urinary Tuberculosis with Multiple Calculi. Dr. Barlow: Renal Sarcoma in a Child. Mr. Page for Mr. Raven: Sarcoma of Dorsal Vertebræ. Mr. Shattock: Tubercular Arthritis. Mr. R. J. Godlee: Bones of Limbs, Skulls, and Sternum, infiltrated with Sarcoma.

EPIDEMIOLOGICAL SOCIETY OF LONDON.

The Presence of Mould Fungi in connexion with Diphtheria.

AT the meeting on April 13th (Surgeon-General John Murray, M.D., Vice-President, in the chair), Dr. MICHAEL W. TAYLOR read a paper on the Presence of Mould Fungi in connexion with Diphtheria. He gave the whole evidence he possessed, which he had collected from many years' experience of outbreaks of diphtheria, in support of views he had formerly expressed in the *British Medical Journal*, July, 1881, on the fungoid origin of diphtheria. He had ventured on a deduction from these observations, which he laid down as a proposition to be worked out—viz., that some common mould fungi growing under certain conditions may originate or transmit diphtheria. The first set of cases comprised three children in one house, who took diphtheria within a few days of each other; no exposure to infection; absence of all evil extrinsic conditions, except the state of the bedroom they slept in. The walls, in consequence of leakage, had become sodden with wet on July 12th. On July 22nd a fungus appeared on wet plaster. On August 1st appeared the first case of diphtheria, rapidly followed by two others, in the children who occupied the room. At this time the surface of the wall was covered with aspergillus mould, besides which there was a surprising development of a pileate fungus, a coprinus, growing on the wet plaster. Second case: Child with diphtheritic exudation on fauces, extending to larynx, and death in three days. Leakage through walls of house some time previously, from storms of wind and rain; great development of penicillium moulds in the apartment; a large quantity of recent skins of cats, covered with mould, stored in an adjoining chamber. Third case: A young man, who had diphtheria severely four days after having been engaged for a whole day in cleaning out a loft in which a number of pigeons were kept, which was full of mould growing on the exuviæ and débris and rotten wood-work. Fourth series: A rapid series of cases in four children in the same family, in which the only insanitary condition known to have existed was the presence of a quantity of fleeces of sheep's wool, which had been stored for two years within the house in an adjoining room. Fifth series: Three outbreaks of diphtheria in a farmhouse, one case in 1879, four cases in 1880, two cases in 1881. Here also wool had been stored within the house, until there had been an accumulation of six years' clippings, and it was kept in a room which had been successively used by these children as a sleeping apartment. The author regarded the evidence in these cases as pointing strongly to the storage of wool, and to the mould spores and dust proceeding from it, as being the exciting causes of three successive outbreaks of diphtheria. After citing the observed phenomena, the author proceeded to work out the probabilities of common moulds being connected in some way as agents in originating the diphtheritic growths. The presence of fungoid organisms, found in the exudations of diphtheria, were of pathogenic import. It was shown by researches of Oertel, Nasiloff, Ebert, and others, that diphtheria is a true mycosis, and that we are warranted in believing that it depends on the implantation of fungoid material endued with virulent power. Evidence was sought from analogy of what obtained

in other fungoid parasitic affections infecting man and animals; it was shown that many of these fungal productions were but conversions of elementary states of penicillium and oïdium. As maintained by Zopf, there may be a pleomorphism amid pathogenic micro-organisms, and that there are stages of intermediate forms resulting from the nature of the nutrient media. Common moulds are capable of artificial growth in the bodies of animals; the spores of aspergillus glaucus have been made to germinate in the eyes of rabbits; and there is a ready-made experiment in the Madura foot disease, which arises from inoculation with the spores of a mucor, growing in the hot season in India. The innocent bacterium and aspergillus may by special cultivation become pathogenic, according to Grawitz and Fepinger; the experiments in this direction by Nägele and Büchner were referred to; and also Lichtein's experimental inquiry on pathogenous mould fungi. So the author claimed that this speculation from bedside experience was sustained by the experiments of the laboratory. He regarded the primary elements of zymotic disease as dependent not on individual forms of germs, but an affair of soil; and inferred that common moulds, both by spores and mycelium, might originate diphtheria by growing on noxious media.—In the discussion which followed Surgeon-General Murray, Sir William Smart, Drs. Thorne and Burns, and Messrs. Shirley Murphy and Paget took part.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.

A MEETING of this Society was held on April 1st.

Mr. JOHN POLAND showed a patient after amputation at the knee-joint by Bryant's method, leaving the inter-articular fibro-cartilages and their fascial surroundings intact. The stump was an excellent example of the result of this form of amputation.

Mr. JOHN POLAND then read a paper on the Diagnosis of Traumatic Separation of the Epiphyses. The chief points in the diagnosis of these injuries were fully discussed. Special importance was attached to the particular period of age in which it occurred in particular bones. At this time the separation was found to be of a simple character and complete—that is, completely through the epiphysiary line of cartilage. Above and below this age the detachment was frequently incomplete or partial, and often very complicated, defying the most skilled surgeon to give an accurate account of the precise anatomical condition of the lesion. Separation of the epiphyses without displacement was described as a most important practical point to be constantly borne in mind, otherwise a number of these injuries would be overlooked. Stripping up of the periosteum, and its subsequent inflammation, were found to take place in this, as well as in the case of a complete separation, but to a much less extent. The question of prognosis, especially as regards the partial separation, was mentioned, as well as the various dangers likely to be met with. Acute joint disease, as in the hip, was often the result of a separated epiphysis. The paper was illustrated by cases that had been under the author's treatment and by specimens from Guy's Hospital museum.

Reviews and Notices of Books.

The Treatment of Spina Bifida by a New Method. By JAMES MORTON, M.D., L.R.C.S. Ed., Professor of Materia Medica in Anderson's College, lately Surgeon and Clinical Lecturer on Surgery in the Glasgow Royal Infirmary, &c. With a paper on the Pathology of Spina Bifida by Dr. JOHN CLELAND, Professor of Anatomy in the University of Glasgow. London: J. and A. Churchill. 1887.

DR. MORTON has considerably enlarged his book in this edition, and by the accumulated experience of the results of his treatment of spina bifida is enabled now to speak of it more confidently than before. The interest that would otherwise have attached to the republication of this *brochure* has been greatly lessened by the issue of the report of the Committee of the Clinical Society of London on the whole subject of the treatment of spina bifida. Not only was this committee a strong one, but its investigations into the clinical side of the subject and into the pathology of the deformity, so far as they went, were so extensive and careful, and their conclusions so well considered, that it would seem as if but little were left in this field for any other investigators just at present; and Dr. Morton relies to a very large extent indeed upon the committee's report for the general facts in this essay. Of course he adopts the committee's view that his treatment is the best at present known, and he supplements it in three particulars—1st, that the percentage of recoveries under it is larger than that found by the committee; 2nd, that he would not exclude from its application even the cases considered desperate; and 3rd, that he would employ it at an earlier date than the committee recommend. A large part of the volume consists of the detailed records of cases under the care of Dr. Morton and other surgeons, and we wish a good table of all the cases known to the author had been appended, for in its present form the book is not well suited for reference. Considerable interest attaches to the short chapter on the Pathology of Spina Bifida, contributed by Professor Cleland. Premising that "it cannot be said that the committee has placed the pathology of spina bifida in a satisfactory position," he points out that "open spina bifida without tumour" must be studied together with the commoner variety of the deformity. Dr. Cleland argues that the essence of spina bifida is a dropsical effusion into the central canal of the spinal cord. The non-tumescent form is not only often associated with but is allied to anencephalus, in that each is due to rupture of a dropsical sac. Tumescent spina bifida he groups into metaneural and perineural varieties—in the former the effusion being behind, and in the latter surrounding, the nerve roots. The metaneural effusion Dr. Cleland believes to be syringocele, or dropsy of the central canal of the cord, or an effusion secondary to this—basing this contention on the frequency of syringocele (three out of five specimens in William Hunter's Museum), and on the fact that in all cases the cord extends down to the sac and does not undergo the usual developmental retraction. Similarly, perineural effusion is based on a burst syringocele in some instances, and in others is associated with an unburst syringocele. The conclusion drawn is that "spina bifida, in all its varieties, implicates in the first instance the interior of the cord."

Rest and Pain. By the late JOHN HILTON, F.R.S., F.R.C.S. Edited by H. A. JACOBSON, B.A., M.B. Oxon., F.R.C.S., Assistant-Surgeon to Guy's Hospital. Fourth Edition. London: George Bell and Sons. Pp. 514. 1887.

THE profession will welcome a new edition of this classical work, which has lost none of the popularity and appreciation bestowed upon it when it first appeared in print under the personal supervision of its learned author. In his editorial preface Mr. Jacobson states that he has made very few alterations in the present edition, on the grounds that since "the author's death renders his name less and less familiar to the generations that are rising, it has seemed more right to leave his book without further changes." We entirely subscribe to this explanation. Mr. Hilton's work is *facile princeps* of its kind in our own or any other language. Its pages teem with facts—dry perhaps in themselves—but rendered palatable, instructive, and interesting by reason of the clinical and physiological interpretations that have embellished them. No one can rise from a perusal of its pages without admiring the ingenuity of the reasoner and the practised skill of the surgeon who, alas! is now lost to science and humanity. Some of the arguments adduced in support of preconceived opinions may seem fanciful and far-fetched when scrutinised by strict logical laws, but, for all that, none can doubt the sincerity and enthusiasm of the writer who gave an affirmative answer to the interrogation contained in Divine writ, "Can these dry bones live?"

It may be safely said that the late Mr. Hilton touched no subject which he did not adorn; and his pages now under review will stand as his lasting monument. In Mr. Jacobson the author of the work found a worthy disciple, and one well fitted to take the responsibility of editorship. Wherever Mr. Jacobson has altered the original text, or amplified it, it has been done with the purpose of rendering it more accurate and complete, and no one can deny that his task has been successfully accomplished. The additions to the work are chiefly in the form of foot-notes, so that the primary plan and substance remain much as they were in previous editions—a procedure far preferable to that which more commonly obtains in excising and substituting, until by mutilation recognition of the author's handiwork is all but impossible.

Practical Pathology; an Introduction to the Practical Study of Morbid Anatomy and Histology. By JOHN LINDSAY STEVEN, M.D. Glasgow: Jas. Maclehose and Sons. 1887.

THE thoroughness with which pathology is pursued in the great schools beyond the Border is reflected in the manuals that have been issued of late from two of the University towns. Dr. Steven's book is the less ambitious of the two, but not less useful, and we can congratulate him upon the manner and style of its production. In the present day our pathological departments ought to be so equipped and conducted that no post-mortem examination should be considered complete unless it included records of histological as well as of gross anatomical appearances. This will not be possible until a more generous recognition is given by the responsible authorities to the pursuit of this subject, for it would necessitate a greatly increased staff and outlay. Yet it has always seemed to us that every effort should be made to perfect our means of pathological investigation and instruction. Much has been done of late years to facilitate such studies, but their value will not become appreciated until examining boards take more cognisance of real practical knowledge. To the earnest student bent on seeing for himself the facts of which he reads, such a manual as that of Dr. Steven will be invaluable. It is not too diffuse or too technical; and although it lacks illustrations, they are not absolutely needed, for the best illustration is that afforded by the specimen itself.

New Inventions.

A NEW SEWAGE PRECIPITANT.

MR. KINGZETT, the well-known inventor, or we might perhaps more correctly say the discoverer of "Sanitas," has patented a very simple agent for the precipitation and utilisation of sewage. This agent is powdered coke. The great value of gas coke as a filtering agent for water was demonstrated, we believe, for the first time by Dr. Percy Frankland, but Mr. Kingzett is doubtless original in suggesting its use in the clarification of sewage. The powdered coke is first mixed with a certain proportion of clay, to increase the density of the precipitant, and is then well mixed with the sewage. It is said that the deposit can most readily be pressed, and that the cake has a certain, although not great, manurial value. What is even more important, the cake can be air-dried and used without nuisance as fuel, or may be carbonised by heat and used again as a precipitant. The suggestion is an interesting one, for every gasworks turns out a quantity of breeze or coke dust, which is sold at a very low rate, and is often hard to sell at all. It certainly seems possible that this breeze, more finely powdered, may prove an economical sewage precipitant. We can express no decided opinion as to its sanitary value, but it promises well, and we shall be glad to hear that it has been properly tried. Mr. Kingzett, in his circular, does not tell us how much of his material would be required. Indeed, he does not seem to have gone beyond laboratory experiments.

A NEW UVULATOME.

UVULATOMY gives very various results in the subsequent degree of discomfort during cicatrisation, according to the method and skill of the operator. It was Bosworth of New York who first pointed out the advisability of cutting in a direction upwards and backwards, so that during deglutition the bolus of food should not come in contact with the raw surface. In order to effect this, he directs that the uvula be seized with forceps, drawn forwards and cut in the direction indicated, with ordinary scissors. That the subsequent discomfort when this is satisfactorily accomplished is infinitely less than when the wound is horizontal I can assert from comparison of the two methods. But the means he advocates are neither simple nor efficient. The chief objection is the drawing forwards of the uvula with forceps; for the loose union subsisting between the mucous membrane and the muscular structures enables the former to be drawn off the latter, and the operation inevitably leaves the stump denuded of its coverings. And thus Bosworth's plan defeats its own ends. With the object of avoiding this mishap, I have had a uvulatome constructed of which the accompanying sketches are illustrations. Essentially it is a pair of strong curved scissors, with a pair of forceps-blades lying beneath and almost in contact. The

latter, while the scissors are still wide open, grasp the uvula. The projecting arm at the end of one blade, which the artist should have represented half as long again, prevents the uvula from slipping back during cutting. With the mouth wide open and the tongue depressed, the patient is instructed to breathe in and out gently through his nose, whereby the velum is relaxed and the uvula brought into a vertical position. This is the more easily effected, since an elongated uvula is generally accompanied by a semi-paretic condition of the soft palate, both being probably dependent upon a chronic congestion of muscular tissue as well as mucous membrane. The instrument is then opened wide, and that portion of the uvula which it is desirable to remove is carefully included in the forceps-blades and rapidly cut through. If the operation has been efficiently performed, we should be unable to see the cut surface. It is scarcely necessary to add that no more than the redundant mucous membrane should be removed.

The instrument has been made for me by Messrs. Mayer and Meltzer, who have shown great ingenuity in securing simultaneous action in the two parts of the mechanism.

Upper Wimpole-street. GREVILLE MACDONALD, M.D. Lond.

OPAQUE GLASS DRAINAGE-TUBES.

MESSRS. WOOD of Manchester have made for Mr. W. R. Dambrill-Davies some drainage-tubes of opaque white glass. The advantages of the glass tube are its rigidity and its cleanliness; its disadvantages are its brittleness and the difficulty of exact adjustment. The special merit of the opaque tubes is that their position in a wound is at once apparent. They are made of three sizes as to calibre, and of various lengths.

THE LANCET.

LONDON: SATURDAY, MAY 7, 1887.

A BILL to Amend the Law relating to the Election of Coroners has been brought in the House of Commons by Mr. WOOTTON ISAACSON. It also bears the names of Mr. E. T. GOURLEY, Mr. W. AMBROSE, Q.C., and Colonel HUGHES. The opportunity is a favourable one for considering it, together with the report (a condensed notice of which appeared in THE LANCET for March 12th last) issued by the Manchester Medico-Ethical Association as to the present inefficient working of the Coroner's Court, and the subject generally. The Bill is a short one, containing only five clauses. Its provisions are briefly to place the elections of county coroners upon the same basis as those of members of Parliament. Thus, upon receipt of the writ declaring the vacancy, the Sheriff is to give fourteen days' notice of his intention to proceed to the election of a coroner. The persons entitled to nominate and vote are to be freeholders whose names appear on the Parliamentary Register then for the county or division, or part or parts thereof, in respect of which the election is being held; and they alone will be deemed eligible to vote. The nomination and poll are to be conducted, so far as circumstances permit, like those at Parliamentary elections, under the Ballot Act, and subject to the provisions of the Corrupt and Illegal Practices Prevention Act, 1883. Provision is made specially for the expenses of each candidate, which, if the number of freehold electors does not exceed 2000, is to be £400, and for larger numbers in proportion. In the event of a petition being lodged against the return of any candidate, the election judges are to appoint a commissioner to try such petition, and if it be successful a new election shall take place. The Bill is well designed to remedy most of the evils of the present system, and deserves every support.

It is to be regretted that the Manchester Medico-Ethical Association made no allusion to medical coroners, but merely expressed an opinion "that the qualification and position of a coroner should be those of a stipendiary judge, who should devote the whole of his time to the duties of his office, and that his salary should in no case be dependent upon the number of inquests." Even if there had been an overwhelming majority in favour of legal coroners, it would have been just to have paid some tribute to the many medical men who have filled the offices both of borough and county coroners with credit to themselves and to the best interests of the public. This would have been more apparent to the latter than it is if medical coroners had more fair play, and had been appointed in anything like a just proportion to their legal brethren. But out of 286 coroners in the Medical Directory whose qualifications are stated, only 49 are medical, while 237 are legal coroners. And the experience of Lancashire is negative, medical coroners being altogether unknown there, which fact may be a possible explanation of their being so ignored in a report issuing from Manchester. There is, however, a still more weighty argument in favour of medical coroners at the present day than there has hitherto been. Judges have strongly condemned the committal of prisoners on the coroner's warrant alone, urging that there should be for every criminal charge an inquiry before the magistrates and a bill of indictment to lay before the grand jury. This would imply what has always been contended for in THE LANCET, that the duty of the coroner is solely to inquire into the cause of death, and this is obviously more the function of a medical than a legal coroner. The more legal duties and legal questions are eliminated from the office the better. Such verdicts as "Found dead," "Found drowned," "Died by the visitation of GOD," are more suggestive of antiquated formalities than modern records of the cause of death, and they are verdicts generally recorded at "legal" coroners' inquests.

The Manchester report, which is of a somewhat sweeping character so far as its reforms go, further suggests "that the coroner should have no discretion but to hold an inquest in every case of death, sudden or otherwise, in which the cause of death cannot be certified by a legally qualified medical man." This is scarcely practical, even with the qualifying addendum: "It is not implied that the coroner should be necessarily debarred from holding an inquiry, provided there exists reasonable grounds for suspicion, because a death has been certified by a legally qualified practitioner." It is undoubtedly true that the discretionary powers of coroners are at present far too great, and that they have often been used very unwisely, especially by legal coroners. But to give coroners no discretion whatever would be only adding to the useless and formal inquests which are already far too numerous. Many cases must be referred to the coroner in which the want of a medical certificate is more or less accidental, and yet where an inquest is wholly unnecessary; it is these preliminary inquiries, indeed, which constitute a very important part of a coroner's duties. This discretion to be used wisely, and the conduct of these preliminary inquiries require a medical training, and can only be properly left to a medical coroner. The report proposes to continue the coroner's jury, but that it should be a properly constituted one, of an improved social status; it deprecates the present custom of "viewing the body" as objectionable and unnecessary; it advocates the providing of mortuaries with proper appliances in every coroner's district. It also suggests that registrars of deaths "should have no option but to report to the coroner every case of death brought for registration the cause of which has not been duly certified by a legally qualified medical man"; and proposes an amendment to the present form of certificate giving "the period of attendance of the medical man." It also raises again the importance of registering still-births, urging "that the registration should be made, as in other cases, only under a medical certificate, which should state that the certifier had attended the mother during her confinement or had inspected the body of the child within a few hours after birth. Failing this that a coroner's inquiry should be necessary." To meet objections on the ground of expense to the poor, it is suggested that the payment of the medical inspection might be charged upon the local authorities. All these suggestions are very good, and though

somewhat in advance of the time, they are practicable and must sooner or later be adopted. The remaining portion of the report we must reserve for consideration until next week.

SIR WILLIAM MAC CORMAC is certainly to be congratulated upon his choice of the subject of his Oration at the Medical Society on Monday last. "Abdominal Surgery" is fast losing the charm of novelty, and the marvellous results attained in this branch of the surgeon's art are familiar to all, and cease to excite the wonder with which they were first received. Sir WILLIAM MAC CORMAC wisely devoted himself to a consideration of one branch of this great subject, which has been the last to receive its meed of notice at the hands of surgeons, and has indeed only been opened up by the large experience now gained in the removal of abdominal tumours, and of the many contingencies attending it. The treatment of Injuries of the Intestine was the theme of the Oration, and it is one well worthy of the attention of English surgeons. Our American brethren at present bear the palm in this region of operative surgery, and it is to BULL, DENNIS, and SENN, among many others, that we are indebted for the best recent papers on this subject, and the best cases illustrating the line of practice they advocate.

Intra-peritoneal wounds of the intestine are certain to lead to fæcal extravasation, which is nearly always fatal from intense septic peritonitis. Experience has shown that wounds of the intestine can be safely sutured, and that prompt and thorough cleansing of the peritoneum may avert septic peritonitis. We are able now to follow out the practice inculcated by BENJAMIN BELL, and Sir WILLIAM MAC CORMAC'S Oration was but the enforcement and exemplification of that great surgeon's teaching. Intestinal injuries may be easily classed into stab wounds, gunshot wounds, and ruptures. The first great difficulty that besets the surgeon in their management is that of diagnosis. We doubt if there is anyone of large experience in surgery who cannot from his own practice cite striking examples of the misleading appearance of harmlessness these lesions often present. As these lesions are so extremely fatal, the very difficulty of diagnosis imposes the duty upon the surgeon of clearing up the doubt and of determining with certainty whether or not they are present. This is the first point that needs to be made plain. To wait until the diagnosis is certain is to miss the golden opportunity for treatment, and to allow the onset of septic peritonitis to rob the patient of nearly every chance of life. Hence, when the doubt exists, it should be cleared up by a careful aseptic exploration, first of the wound in the parietes, to see whether it is perforating or not, and next of the abdominal viscera, to ascertain whether and where they are injured. This may be a difficult task, and, if undertaken at all, must be done systematically and with the utmost precision. But it is also the step at which some, perhaps many, surgeons will pause. While quite ready to admit that when a wounded intestine is known to exist it may be best to suture the wound, cleanse the peritoneum, and close its cavity, they will hesitate before they adopt the bolder step of seeking out the injury when the symptoms do not indubitably point to it. To some extent their scruples will be just. While such an exploration may be urgently needed when the intestine is wounded, it should not be practised when only a suspicion of such an injury exists, and the surgeon must weigh most carefully all the circumstances of the case before adopting so grave a procedure as the systematic inspection of all the abdominal viscera. Such a case is just the one to test the mettle of a surgeon, and the practice advocated, while good in the hands of the wise, may be fraught with evil in the hands of the careless.

An intestinal wound having been discovered, the proper line of treatment undoubtedly is to close it with the utmost care by the Lembert suture, and, having cleansed the peritoneum, to close the external wound. Such a line of practice is not good in theory only. Already its results in practice are encouraging, and likely to become more so when surgeons are more familiar with such proceedings. Of eighteen stab wounds so treated, success has been obtained in ten. Among thirty cases of penetrating gunshot wounds of the abdominal cavity, seven have been saved by this means. There is, however, one feature in these cases that must always militate against success. They are of the nature of surgical emergencies. They do not permit of special preparation, and the circumstances attending them often tend to depress the patients and unfit them for a severe operation. But in spite of all this, and of all the grave difficulties attending the subject both in diagnosis and treatment, it cannot be doubted that the facts contained in Sir WM. MAC CORMAC'S address are evidence of another advance gained by surgery, and the arguments deduced from the facts are well deserving the careful consideration of surgeons.

WHATEVER of scientific truth may eventually become established concerning the reflex relationship of the cervical region with the brain and bulb, now set forth by Professor BROWN-SÉQUARD, there can be no question of the remarkable suggestiveness of his conclusions. He showed some years ago that puncture of a certain region of the floor of the fourth ventricle, in close juxtaposition to the vaso-motor and cardiac centres, but not identical with them, has the effect of reducing to the lowest possible ebb the nutritional changes of the organism, so that the blood in the veins runs red as that in the arteries; for the protoplasmic tissues neither absorb oxygen nor disengage carbonic acid, being, in fact, in a state of suspended animation. But this is not the only cessation of activity that may be brought about as the effect of puncture of the floor of the fourth ventricle. The activity of the cerebral cortex may also be suspended by a similar operation; and actual death may also occur. To sum up in a few words the latest conclusions of the distinguished experimental pathologist, we may state that the skin of the neck covering the larynx has, like stimulation of the larynx, though in a less degree, the power of inhibiting the sensibility of the body, and, further, that mechanical irritation of the larynx, trachea, and perhaps of their superjacent skin, possesses the power of causing death, in the same way as though the bulb or medulla oblongata were irritated. These are extremely important conclusions, and it will be well to examine the evidence on which they are founded. The following is the gist of Professor BROWN-SÉQUARD'S communication to the Académie des Sciences.

It has often excited surprise that suicide by cutting the

throat should be carried out with such determination, and apparently at the cost of enormous suffering, indicating an almost superhuman courage. The surprise, however, would be considerably lessened if it were true, as is now asserted, that mechanical irritation of the skin covering the larynx, as well as of the larynx itself, causes total analgesia, as seems possible from the remarkable experiments Professor BROWN-SÉQUARD made some four years ago. After having made a longitudinal incision through the skin of the middle line, or transversely from one side to the other, in the anterior cervical region, the Professor observed in a great number of experiments, especially in dogs and monkeys, that he could lay bare, cut, bruise, galvanise, and even burn the various structures in the anterior two-thirds of the neck without causing any great pain, and sometimes without appearing to cause any pain whatever. Such facts—verified hundreds of times during the last five or six years—prove that these structures have the inhibitory property of causing general analgesia, though in a varying degree, according to the precise structure stimulated—viz.: (1) The maximum effect is produced by stimulation of the mucous membrane of the larynx—i.e., of the parts supplied by the terminal ramifications of the superior laryngeal nerves. (2) In a less degree irritation of the trunks of these nerves, and in a still less degree of the trunks of the vagi above the point of emission of the superior laryngeal nerves, causes the same result to appear. (3) A transient analgesia of variable completeness may be caused by ligature of the trachea. (4) The minimum effect is caused by the irritation of the skin covering the throat, and especially of that over the larynx proper. Although incision of the various structures is the most effective in bringing about the analgesic effects, it is not the only irritation that possesses this property. The trigeminal and other sensory cranial or spinal nerves in their trunks or ramifications do not appear to be endowed with the special power that the vagus nerves and the nerves of the cervical region possess. Surgeons performing tracheotomy during the asphyxia of a patient may be incorrect in supposing that the asphyxia confers immunity from pain, for doubtless the analgesia is partly owing to the very incision of the skin of the front of the neck. Other experiments on animals seem to show that stimulation of the anterior cervical region, especially the larynx, but also the trachea, and probably the superjacent skin, has the power of stopping the heart, inhibiting the respiration, and suspending consciousness. When Professor BROWN-SÉQUARD has killed dogs by cutting their throats, he has found that nearly always, if not always, death occurred without convulsions, without agony, in a state of perfect syncope, permitting the protoplasmic tissues of the body to preserve for a long time their special properties: the blood running red from the arteries to the veins, and thus presenting an absolute contrast to death due to asphysia, where the arteries are filled with black blood.

AN article descriptive of the morbid conditions in twenty-five cases of tubal disease operated upon by Prof MARTIN, is contributed to the current issue of VIRCHOW's *Archiv* by Dr. E. G. ORTHMANN. It should be read with interest at this time, when so much is being said regarding the clinical aspect of the chronic inflammatory changes to which the uterine appendages are prone. Dr. ORTHMANN describes in detail the histological characters of his specimens, and in the first place draws attention to the normal structure of the Fallopian tube. The wall of the tube is composed of three layers—the mucous membrane, which, covered with ciliated epithelium, is disposed in longitudinal folds, which towards the free extremity become branched and divided, ultimately forming the so-called fimbriæ; the muscular layer, greatly developed in the uterine segment of the tube, and diminishing in thickness towards the abdominal extremity; and the outermost connective-tissue layer. The morbid conditions described fall under five heads, and each case is related in full. Of *catarrhal salpingitis* there were nine cases, six being unilateral. The disease is not limited to the mucous membrane, nor does the ciliated epithelium at first suffer, the change commencing with thickening of the mucous membrane, and consequent irregular swelling of its folds. The swollen folds coming into contact, the cells are compressed, degenerate, and disappear. More or less cystic cavities form between the thickened folds of mucous membrane; and bloodvessels in the infiltrated submucosa may rupture, giving rise to hæmorrhage into the cavity of the diseased tube. Such hæmatosalpinx may result from a closure of the fimbriæ. The muscular and fibrous coats of the wall of the tube may also be thickened, often with atrophy of the muscular fibres themselves. In five cases the "ostium abdominale" was occluded, partly by hypertrophy of the mucous folds, partly by adhesive peritonitis. The following varieties of catarrhal salpingitis are enumerated, the term "catarrhal" being obviously used in a wide sense:—(1) Salpingitis cat. simplex or endosalpingitis; (2) S. diffusa or interstitialis, which comprises (*a*) S. hæmorrhagica and (*b*) S. follicularis. Of *purulent salpingitis* eight cases are described. In seven of these the most careful examination failed to detect any bacterial organisms—a negative result which suggests either that the organisms were remarkably scanty (as usual in chronic suppuration), or else that they could not be manifested by the methods used; reference, however, is made to the discovery by other observers of tubercle bacilli and of gonococci in tubercular and gonorrhœal salpingitis, and Dr. ORTHMANN himself has quite recently recorded an instance of the last-named variety.[1] In purulent salpingitis only traces of the ciliated epithelium remain where protected by the folds which are now converted into wide septa between cavities filled with pus; whilst the mucous membrane is more or less replaced by the granulation cells of the inflammatory process. In places the muscular coat may be laid bare by the destructive process. This coat may also be thickened by infiltration of round cells, and the vessels will be increased. In six cases the ostium abdominale was occluded, and of the others one had a fistulous communication with an ovarian abscess. There were two cases of *hæmatosalpinx*, in one of which there was atresia of the ostium abdominale, the mucous folds were stretched, and the wall somewhat atrophied. In the other case the tube was occluded by a kink. Four cases of *hydrosalpinx* are described, three of which were unilateral. In all the superficial epithelium was not much altered; in one case the mucous folds were hypertrophied, but in the

[1] Vide Berl. Klin. Woch., No. 14, 1887.

rest they were dwindled, and the muscular coat was also atrophied. Lastly, there were two cases of *pyosalpinx*, a condition generally dependent upon atresia of the tube. The walls were thickened and their vascular supply increased. No microbes could be found in the purulent contents. Dr. ORTHMANN also gives a summary of these cases, from which we gather that in the twenty-five operations there were three deaths—one from collapse and two from peritonitis. Of these cases twenty-one were simple salpingotomies (two deaths). In two instances the patient underwent a second laparotomy. In one a right hydrosalpinx was removed seven months after the extirpation of the left appendages; in the other, a large hæmatoma of the right ovary had been removed thirteen years before. The majority of the patients had presented no disturbance of menstruation; in five cases it had been of late somewhat profuse, in five there was severe dysmenorrhœa, and in three menstruation was irregular. The chief and universal symptom was pain in the abdomen and groin, whilst in ten cases there occurred hæmorrhage and in seven marked uterine discharge. As to the etiology of the cases, ten were ascribed to gonorrhœa, these including six purulent cases, two catarrhal, and the two cases of hydrosalpinx. Four were post-puerperal, but in the remainder no definite cause could be assigned. Two cases were associated with cancer of the uterus, one with myoma, and one with an ovarian cyst. The ovary was found diseased in all but two of the cases. In eight there was chronic ovaritis, two being further complicated with hæmatoma of the ovary and one with hydrops folliculorum. In four other cases there was ovarian hæmatoma, and in three others hydrops folliculorum, without other lesions. There were five cases of ovarian abscess, which in two cases communicated with the tube by small openings, and in one the tube and ovary were conjoined in a common abscess sac. One case of catarrhal salpingitis was associated with an ovarian cyst of the size of the fist. Atrophy of the ovary occurred three times, and parovarian cysts in four cases; in three cases there was hæmatoma between the ligaments, and in one an abscess. We have called attention to this contribution because it seems to us that the pathology of these conditions has yet to be worked out, whilst the material is rapidly accumulating for a thorough study of the subject.

DURING next week the General Medical Council will have to decide whether the Apothecaries' Society shall cease to exist as an examining body, or whether, by the appointment of assistant examiners in surgery, the special powers which they possess for protecting the public against unqualified practitioners shall be maintained. Of the issue there can be little doubt, however greatly we must deplore the multiplication of licensing bodies. There has not been from the first any question that the failure of the Colleges to unite with the Society is due to the action of the former alone; but if further argument were wanting, it is to be found in the rebuff which the Medical Council have themselves received at the hands of the Colleges, who have refused to comply not only with the request of the Council, but also with that of the greater number of their licentiates. We have no hesitation in saying that the governing bodies of the two Colleges have by their action lost the confidence of many of the profession, and we anticipate that evidence will not long be wanting of a determination to bring about the change which has hitherto been sought in vain. Until this is accomplished the Apothecaries' Society will continue to grant a separate licence to practise. By the appointment of assistant examiners the Medical Council will themselves be practically engaged in the duty of examining. A further business, moreover, which will occupy their attention is the appointment of inspectors of examination, and this will bring them still more closely into relation with this function of the corporations. Indeed, it is not impossible that in the future their powers in this direction may be increased until they have placed upon them a greater responsibility than that of acting as the critics of other people's work. Already they have adopted a resolution that the visitations and inspections shall systematically cover within stated periods of time the pass examinations in all branches of knowledge which the Council deem essential as qualifications for licence. Their intention is, therefore, to perform this duty in no perfunctory way, and although during the present year they will not go beyond the appointment of three inspectors, one each for medicine, surgery, and midwifery, it may be anticipated that it will not be long before every branch of medical examination is represented. The work of each inspector will be to attend the examinations of all the licensing bodies in the United Kingdom, so as to enable him to form an opinion upon and report to the Council as to their sufficiency or insufficiency. Evidence obtained in this manner will be the groundwork upon which future changes will be based, and it may be accepted that failure to protect the public from the entrance into the profession of unskilled practitioners will lead to the loss of powers to exercise this function. The selection of inspectors is therefore a matter of the greatest moment to the profession, and the Council may be trusted to exercise a wise judgment in their choice.

Annotations.

"Ne quid nimis."

THE LATE DR. WILSON FOX.

THE announcement of the death of Dr. Wilson Fox will cause widespread grief in the profession. A physician has passed away in the prime of working life whose knowledge, judgment, and skill had won for him a degree of confidence which few secure, and whose loss creates a void which cannot be easily filled. But this is not all. A man has passed away who was far more than a skilled physician. Dr. Fox combined in a degree rare in any calling moral elevation and moral courage, spiritual ardour and self-devotion. No consideration for his own interests warped his action from the straight line of right and honour, or dimmed the clearness of his mental vision. His intense energy has been a motive force in the profession of far wider influence than appeared on the surface, for he was ever ready to efface himself when the movement he had started had gained inherent strength. He will be deeply mourned, not only in the profession, but in a wide and ever-widening circle of those who knew him, and, knowing him, could not help entertaining towards him a feeling deeper than mere esteem, and warmer than mere gratitude. We hope next week to give some account of his life—a life of hard and earnest work, a

life of devotion and self-sacrifice, ending with the final sacrifice of himself, where so many have laid down their lives, on the altar of beneficence. To-day we give an account of his last illness.

On Saturday, April 23rd, Dr. Wilson Fox was in his usual health in London, and intending to proceed to his home in Westmoreland in the afternoon. His doing so was prevented by a telegram informing him of the serious illness of his eldest brother. He went into Somersetshire to see him, and found him suffering from acute double pneumonia and his case almost hopeless. He remained until his brother died on the following Wednesday, April 27th. During this time he had suffered from lumbago and some slight feeling of cold, but left for the north, stopping at Preston on his way. He was quite well when in Birmingham, and walked about there. At Preston he ate a simple dinner with thorough relish, and retired apparently quite well. Early in the morning he was disturbed, and sustained some chill amounting to a slight rigor. His temperature was raised, and he was seen by Dr. Brown of Preston, who found him suffering from pneumonia, with extreme cardiac weakness. During the day he was visited by Sir William Roberts, an old college and intimate friend, who took a very grave view of the case owing to the extreme cardiac weakness and his depression, the result of the death of his brother. He rallied in the after-part of the day. The temperature was never high. His cough was troublesome, and expectoration characteristic, not excessive. But very frequently there were recurrences of extreme cardiac dyspnœa, which were relieved by treatment. On Friday afternoon he was seen by Sir William Jenner in consultation with Sir W. Roberts, and the former remained with him during the night. His condition on Saturday morning was that which might be expected of pneumonia running its ordinary and natural course, but about 10 A.M. serious prostration (cardiac) reappeared, causing great alarm. Dr. Russell Reynolds was telegraphed for to come down immediately, which he did, and found that he had made some slight rally. The night of Saturday was passed with more comfort, and on Sunday morning, although suffering from some pleurodynia and lumbago pains and rapid breathing, he appeared better. About midday, after some intestinal disturbance, Dr. Fox became excessively prostrate. He was perfectly aware of the danger of his condition and took leave of his family. During two hours and a half death seemed imminent, but he occasionally rallied for a few minutes under subcutaneous injections of ether and the administration of stimulants and nourishment, which he took easily. During all this time there was considerable cyanosis. Later in the day he was better and passed a fair night, with some tranquil sleep, and on the morning of Monday the improvement was maintained. About midday, without apparent cause, his dyspnœa became most urgent, and it was found that he had mucous râles in the small bronchial tubes of both sides of the chest, with extension of lung congestion on the left side. From this, although from time to time there were periods of some relief, he did not rally, but occasionally, when dyspnœa was urgent, found great comfort from the hypodermic use of ether. His breathing did not trouble him, but cyanosis increased; he was perfectly clear in intellect, capable of understanding his own condition; but he became weaker and weaker every hour in spite of all that was done to aid him, and exactly at 4 A.M. on Tuesday he breathed his last, without any struggle or sigh. He had spoken with clear intelligence three minutes previously to Dr. Reynolds. Eleven years ago Dr. Wilson Fox had an attack of extremely acute pneumonia, and this was obviously of a rheumatic character, and extended to the pleura, pericardium, and endocardium. His life was then in grave danger during two or three days, and unfortunately both aortic and mitral valves were affected, but after a certain time of rest his recovery to all except those who knew the physical condition of his heart was complete. In the spring of 1886 another attack of pneumonia occurred after an accidental chill, when much depressed by the death of his mother, but the cardiac condition was again a source of extreme danger. From this he recovered, and was able to attend to his professional duties, and to exhibit, as all those who met him knew, an extraordinary amount of energy in work, mental and physical, professional and social.

The Court Circular of Wednesday contains the following: "The Queen was much grieved to receive yesterday the news of the death, after a few days' illness, of Dr. Wilson Fox, one of Her Majesty's Physicians in Ordinary. Dr. W. Fox had formerly been in frequent attendance on the Queen in Scotland, and Her Majesty had a great regard for him. The medical profession loses in him one of its most distinguished members."

THE ACTION OF THE DIAPHRAGM.

IN a memoir published in the just-completed volume of Braune's *Archiv für Anatomie und Physiologie*, Hasse gives the results of his observations and experiments upon this subject. He finds that the contraction of the muscular fibres of the diaphragm causes a flattening and descent of the diaphragmatic domes. The tendinous centre also descends, and becomes flattened by the traction exerted upon it from every side by the muscular fibres. In deep inspiration the descent of the diaphragmatic domes is always more considerable than that of the tendinous centre. The contraction of the muscular fibres of the diaphragm causes, as was maintained by Duchenne, an expansion of the lower aperture of the chest, owing to elevation of the ribs and of the sternum. When contraction of the muscular fibres of the diaphragm takes place, the muscular plane they form separates from the long walls of the thorax, and consequently cause an enlargement of the complemental space of the pleural sac; and to so much the greater extent the greater the coincident elevation of the thoracic cage. The descent of the diaphragm augments the normal positive intra-abdominal pressure, whilst its ascent diminishes the pressure, though never to zero. The changes of position which occur in the descent of the diaphragm cause a corresponding change in the position of the viscera lying subjacent to it—as the liver, stomach, and spleen. The liver is consequently by no means a rigid, fixed organ, but varies both in form and position. When the diaphragm contracts, the resistances to the flow of blood through the liver and spleen are overcome, and the passage of blood through them is rendered easier in proportion to the freedom of the respiratory acts. Lastly, the movements of the diaphragm are essential for the discharge of the bile, and further the movement of the contents of the stomach and intestines.

VACCINATION UNDER DIFFICULTIES.

THE Sultan of Turkey, it is said, has just had the ladies of the seraglio vaccinated, and we are told that the operation was attended with difficulties which fortunately are unknown in this country. An Italian physician who was employed to vaccinate the ladies of the harem was not permitted to see the faces of his patients, from whom he was separated by a screen. The operation, it is stated, was performed on the patients' arms, which were in turn thrust through a hole in the screen; and on every occasion of one arm being replaced by another, the physician was obliged to submit to his head being enveloped in a shawl, to prevent any chance of his seeing the subjects of his operation. The circumstances which permit the entrance of a man into a harem must be of rare occurrence, and probably there are none under which he is more welcome than when he comes to preserve the beauty of the inmates. Whether the Sultan has learnt by experience the necessity for vaccination, or

whether he is guided only by others, the fact remains that female beauty is more indebted to Jenner's discovery than to any art to which the sex can have resort. It has often been remarked that the portraits of ladies who were the English Court beauties of former times give no very exalted idea of the personal appearances which in those days merited approbation, and that the originals only excited admiration from the fact that they were among the few who escaped the disfigurement which attends an attack of unmodified small-pox. However this may be, we trust that the example which the Sultan has set will have its effect in leading to the more general vaccination of his subjects. There is nothing which more strongly impresses the traveller in the East than the large proportion of inhabitants who are scarred with small-pox.

THE DISTRIBUTION OF MICRO-ORGANISMS IN THE ATMOSPHERE.

THE interesting paper read by Dr. Percy Frankland at the Society of Arts on March 22nd will be found in the *Journal of the Society of Arts* of March 25th. In it he reviewed the history of the subject of atmospheric micro-organisms, by reference to the experiments of Pasteur, Tyndall, Miquel, and Freeudenreich. The introduction by Koch of solid cultivating media had, he pointed out, greatly assisted these investigations, and Hesse's method by the use of a glass tube coated internally with sterile gelatine peptone, through which a given quantity of air can be drawn by aspiration, had been largely used by Dr. Frankland. He pointed out, however, that the accuracy of this method depends somewhat upon the strength and direction of the air currents, and he had therefore devised a modification consisting in the introduction of glass porous plugs to retain the micro-organisms, the plugs being transferred to flasks containing liquid gelatine, in which, after cooling, the colonies resulting from the microbes later develop. The estimation of the abundance of microbes in the air is made by enumerating the number of colonies obtained in a given quantity (ten litres) of air thus filtered. Amongst the results stated may be selected the fact that from observation on the roof of the Science Schools at South Kensington the average number of colonies per ten litres of air varied from four in the month of January to 105 in August. On the top of Primrose-hill on May 19th, 1886, the average number of colonies was nine; at the foot of the hill it was twenty-four; at St. Paul's Cathedral the number in the air in the Golden Gallery was eleven, in the Churchyard seventy. In country places the air contained much fewer microbes than in towns, especially in crowded thoroughfares—there being, for instance, as many as 554 per ten litres in Exhibition-road on June 8th, 1886. Fischer's observations upon the gradually diminishing number of microbes in sea air in proportion to distance from land were shown to depend upon the direction of the wind, with the general conclusion that the maximum distance to which, under ordinary circumstances, micro-organisms can be transported across the sea, "lies between 70 and 120 sea miles, and that beyond this distance they are almost invariably absent." Records were also given of observations on the air of buildings, and upon the number of micro-organisms falling upon one square foot of horizontal surface in one minute. As to the nature of the aerial micro-organisms, the moulds were found to be most universally prevalent, being found generally in greater proportion to other forms at high altitudes in the open country. Numerous forms of micrococci and bacilli, especially chromogenous species, have been identified in the air; but, as regards pathogenic microbes, Dr. Frankland stated that their detection in presence of the overwhelming number of saprophytic organisms was almost hopeless. The air in a hospital ward, provided it be undisturbed, contains very few organisms, and the investigation points to practical hints in the prevention of any aerial commotion during surgical operations, and the great importance of removal of dust in a moist condition.

THE MEDICAL REGISTER.

THE Medical Register for 1887 has just been published. Its appearance this year has been delayed by the adoption, just before its final issue, of a suggested improvement, according to which initial headings at the top of each page enable the contents of each to be more readily seen. During the past year the work has been subjected to more thorough revision than in any previous year, circular letters of inquiry having early in 1886 been sent out to all practitioners, and in November voting-papers in connexion with the election of direct representatives to the General Medical Council. As the result of these inquiries, a very large number of corrections have been introduced. The statistical information contained in the volume will be found very complete, and in addition to the numbers being given of practitioners registered in the different divisions of the United Kingdom, the information is now supplied as to how many are resident in the three divisions. In the introductory part of the work the new Medical Act of 1886 has been printed, together with the older Acts, for the information of the profession, and a table of the qualifications in sanitary science that become registrable under the new Act is also inserted. Copies of the volume may be had, as in previous years, either at the office of the Medical Council or at the accredited publishers, Messrs. Spottiswoode and Co., 54, Gracechurch-street, E.C. The Medical Students' Register and the Dentists' Register for the current year have also been issued, and may be obtained at the same place.

MORTALITY AMONG RAILWAY SERVANTS.

NEARLY seven hundred millions of passengers travelled on railways in Great Britain last year, and of these eight were killed and 615 were injured in what are commonly called railway accidents. Many other persons not in the employ of the railway companies were killed or injured by accidents connected with the railway service, such as falling between carriages and platforms and the like; but, excluding servants of the companies, the total number of deaths from causes incident to railway travelling were only a trifle over 500, and of injuries only about 1500. Considering that these numbers include a great many casualties due to neglect of well-known precautions, we may conclude that, as regards passengers and the public, railway travelling is the safest mode of locomotion. But when we turn to the servants of the railway companies, the picture is not only less satisfactory, but almost appalling. We are not informed of the actual number of hands employed in the more dangerous kinds of railway work; but we are told that, including the railway carriers as well as the ordinary servants, there were last year 459 fatal and 5490 non-fatal accidents. Five men are killed on an average in four days, and sixty injured more or less severely. Whatever the number of workmen may be, this represents a very grave amount of injury to life and health, and the statistics prepared by the Board of Trade deserve the most serious consideration. Doubtless a large number of the casualties are due to the carelessness of the men. Familiarity with danger breeds indifference, if not contempt, and we all know by our daily railway experience how wilful platelayers, porters, and pointsmen are in running totally unnecessary risks. If a porter has to cross the line he seems to delight in waiting until the very last moment before the express dashes through the station, and in the same way the carman seems to choose by

preference a place exactly below the heavy weight which is being raised by a crane. A party of plate-layers, apparently with no one on guard, will continue their work with scarcely a glance up or down the line until a whistle reminds them that a train is close upon them, when they gather their tools and move out of the way quite leisurely. These things we have all watched with a feeling of irritable nervousness, and have, perhaps, from time to time admitted in our hearts that railway companies cannot be held morally responsible for the suicidal recklessness and stupidity of some of their *employés*. But, recognising all this, we fear that much real blame still attaches to the railway companies for the loose supervision which they exercise over the lives and limbs of their servants. Men constantly exposed to danger, even when, as often happens, they are not excessively overworked, are sure to become careless, and it is universally admitted that it is a part of the duty of employers to enforce due care upon their servants, as well as to diminish, as far as possible, the unavoidable risk they run. The protection of machinery in motion, the regulation of coal mines, and the inspection of ships, are all examples of the care which the State now bestows upon those engaged in dangerous industries. Economy of labour is probably, next to individual carelessness, the chief cause of the so-called accidents. It would surely be possible, without any great increase of expense, to arrange that in every party of men engaged in any particularly dangerous work, such as the shunting of trains or the repairs of the permanent way, one man, experienced and worthy of trust, should have some responsibility for the safety of the rest. He would be a foreman, and if any disaster due to negligence happened to one of his gang, a greater or less degree of blame would attach to him. No doubt he would individually do less manual work, but probably the work would be better done, and at any rate, if sufficient authority were committed to him, he would in many cases save the men under him from the results of their own ignorance or indiscretion. When Parliament finds time for domestic legislation, we hope it will endeavour to minimise the risks run by a useful body of public servants.

FUNCTIONAL DYSPEPSIA AND ITS RESULTS.

DR. JAWORSKI has investigated, chiefly with respect to the relative amount of hydrochloric acid secreted, the composition of the gastric juice in 222 individuals who presented symptoms of gastric disturbance, yet in whom there was no evidence at all of organic disease of the stomach. His observations have led him to differentiate five groups, or rather stages, of functional derangement (*Wien. Med. Woch.*, 1886, Separatabdruck). In the first, under the influence of repeated irritation of the gastric mucous membrane, as by brandy or condiments, the sensibility is increased to a degree that during digestion there is developed an abnormal secretion of hydrochloric acid, which may give rise to subjective gastric disorder as well as remote nervous symptoms. The condition, he says, is readily recognised, and is declared to be nervous dyspepsia, but it actually forms a prodromal stage of more permanent derangement, for in the next stage he finds that the acid is secreted continuously and spontaneously even in the empty stomach, the quantity increasing during digestion. These cases are marked by gastralgia and vomiting, and the mucous membrane is, one may say, subinflamed. This condition may, under continued irritation, pass into a third stage, when the acid secretion is extremely abundant, being as high in the intervals of digestion as during the process. Often bile finds an entrance into the stomach, and under the action of the acid is converted into the characteristic greenish-yellow flakes. The gastric epithelium is acted on, being shed in masses and in layers. The condition leads, as may well be imagined, to dilatation of the stomach, partly from weakening of the walls, and partly from incomplete evacuation, with fermentation of the food débris. The symptoms are those of intense gastric discomfort after taking food, with retention of appetite. The excessive thirst can only be allayed by warm drinks. Ultimately an anæmic state is developed. The condition may be termed "hypersecretio hyperacida continua," or "gastrorrhœa acida," or, anatomically, acid catarrh of the stomach. It seems to accompany most cases of gastric ulcer After this extreme condition of irritation has lasted a certain time, there occurs a diminution of the secretion of hydrochloric acid, and the mucous membrane gradually loses its sensibility to stimuli. This the fourth stage (or type) of functional disorder is characterised by feebly acid or even alkaline reaction of the gastric juice, and, anatomically, it is marked by gastric dilatation. It is the condition which patients style "a weak digestion," and it is attempted to be corrected or arrested by stimulating foods and drinks; but these efforts often cause the case to pass over into the fifth or last stage of the series. Here we have a total incapacity of the stomach to secrete acid, and in great part also a loss of pepsine-forming power. No stimulus can excite the acid secretion. The stomach contains a small quantity of mucoid, cloudy, mostly alkaline fluid, of no peptonising power. Yet the patients may be well nourished and not always anæmic, intestinal digestion still being in action. The condition, "mucous catarrh," is that which accompanies most cases of gastric carcinoma.

SMALL-POX AT CARDIFF.

OUR attention is drawn to the prevalence of small-pox at Cardiff, and to the action which is being taken in consequence. According to the *Western Mail*, arrangements have been made that the public vaccinators shall attend at their own residences every evening at a certain hour, so that the working classes may have an opportunity of securing revaccination, and that on receiving notice of the existence of small-pox in any house, the public vaccinator for the district shall proceed to that house, and there offer vaccination or revaccination, as the case may be, to all the inmates. On the part of some it is thought that further action should be taken, and that a house-to-house inquiry should first be made, this being followed by the offer of vaccination at their homes to all who need additional protection. The house-to-house inspection suggested is of the utmost value, and it has on several occasions brought about the best results—as, for example, in the St. Pancras outbreak of 1884. But as regards the expediency of taking vaccination away from the stations where a proper supply of lymph from infants is alone obtainable, except under such special emergencies as the existence of small-pox in a house, grave doubts may be entertained. That some immediate good would result we do not doubt, but, after all, it is the full protection of the general population by efficient vaccination that must be the main aim of the guardians, and not the spasmodic gift of an inferior vaccination on a large scale at moments of panic. House-to-house vaccination must necessarily be largely performed otherwise than from arm to arm, and it is notorious that vaccination so done is, as a rule, less efficient than when the lymph is taken direct from an infant's arm, and that it tends in the end to bring vaccination into disrepute. It therefore becomes a question whether the main gain would come from a large increase in the amount of vaccination irrespective of quality, or from a limited amount having true protective qualities. We have looked at the memorandum issued by the Local Government Board on this subject, and we find it entirely supports the view that the current work from arm to arm at the stations should, even in moments of emergency, not be sacrificed to sudden demands arising out of a previous neglect to secure efficient protection.

REGINA v. BAXTER AND POTTS.

ON April 28th and 29th the trial of Mr. Baxter, an unqualified medical assistant, and Mrs. Potts, described as a midwife and ladies' nurse, for having procured illegal abortion on Elizabeth Culling, aged twenty-two, took place at the Old Bailey before Mr. Justice Stephen. The jury convicted the prisoners, who were sentenced each to fifteen years' penal servitude. There was a committal by the coroner on the capital charge, but this was abandoned by the prosecution, and the prisoners were indicted only on the minor count of felonious assault, as it was considered doubtful if the evidence would suffice to warrant a conviction on the charge of murder. The facts of the case are already known, so that it is not necessary to give them in detail. The deceased, a single woman, ostensibly an assistant in a confectioner's shop, but who appears to have led a "gay life," resided at a private hotel in London-street, Paddington. As alleged by the prosecution, she went to reside with the female prisoner for the purpose of having an abortion procured. The evidence went to show that she was attended by Baxter, who was known as "the doctor" and as the husband of Mrs. Potts, but, as a matter of fact, he was neither one nor the other. Some days after the abortion took place, finding deceased in an apparently hopeless condition, one or both of them took her to the Paddington Infirmary, where she died the day after her admission. The acting medical officer of the infirmary, together with his colleague, made an unofficial post-mortem examination. From this they learned that deceased died from acute peritonitis and blood poisoning consequent on a recent abortion. They also detected two deep grooves or puckerings in the neck of the womb. Subsequently, by order of the coroner, a further examination of the body was made by Mr. Pepper, assisted by Dr. Smith. These gentlemen ascertained that the so-called puckering in the cervix were two deep lacerated wounds half an inch deep extending for the whole length of the cervix. They were further of opinion that the rents had been made some days before death. A portion of the placenta corresponding to a four months' pregnancy was still firmly adherent to the fundus uteri. There were no injuries to the body of the womb, nor to the vagina or external genitals. No natural cause of abortion was discovered. At the fourchette and for some distance up the vagina were some "gonorrhœal warts," but no signs of syphilis were to be seen. A few days before her death deceased had been treated at the Lock Hospital for vaginitis. The theory set forth in the prisoner's defence was that the abortion was a consequence of the death of the fœtus, and that this was due either to syphilis or to inflammation having spread from the vagina to the uterus, or to blood poisoning from absorption of the vaginal discharge. The medical men who gave evidence for the Crown admitted that these were all possible causes of abortion, and that syphilis was a very frequent cause. They further admitted that natural abortion is a not unfrequent event from causes other than those above enumerated, but they declined to subscribe to any definite percentage of abortions in a given number of conceptions. In this they were undoubtedly right, as authorities on the subject differ very widely in their estimates. Mr. Justice Stephen, who was of the same mind, told the jury that, medicine being an inexact science, it was difficult to obtain absolutely trustworthy statistics on account of the difficulty in obtaining all the facts in the inquiry. A point of some importance was raised concerning the post-mortem evidence of syphilis. Mr. Pepper admitted that it was just possible that a person might have been the subject of the constitutional affection, and yet that at a necropsy no conclusion of the existence of the disease might be found. Mr. Bloxam deposed that, in his opinion, if syphilis were present it would be discovered, since the lymphatic glands remain enlarged so long as the patient suffers from the disease. The latter statement is no doubt quite correct; but would one be justified, upon finding enlarged glands apart from other signs of syphilis, in concluding that the deceased was the subject of syphilis? Whatever may be the surgical interpretation of the question, it was obviously safer to give the prisoners the benefit of the doubt implied by the difference of opinion expressed at the trial. Apart, however, from the medical evidence, the collateral testimony—circumstantial and direct—told strongly in favour of the guilt of the accused. Before Justice Stephen passed sentence Mr. Poland informed him that the Treasury were in possession of information that the convicts had illegally procured abortion in other cases.

CARBOLATE OF MERCURY IN SYPHILIS.

DR. KARL SHADEK of Kieff, being anxious to try the effects of carbolate of mercury, which has been strongly recommended in syphilis by Professor Gamberini, requested M. H. Brandt, a pharmacist in Kieff, to prepare some for clinical use. This he did by precipitating a very dilute solution of bichloride of mercury with a concentrated alcoholic solution of carbolate of potassium. A yellowish precipitate was obtained, which, after being frequently agitated with the liquid for twenty-four hours, assumed a whitish appearance. It was filtered and washed with distilled water till the washings showed no traces of chloride. It was then transferred to a fresh filter paper and dried under a bell jar. In this way a nearly white tasteless amorphous substance was obtained, which was scarcely acted upon or dissolved by cold, but was readily soluble in boiling hydrochloric acid. The name given to it by Dr. Shadek is "hydrargyrum carbolicum oxydatum," and he has been using it in his private practice for several months. At first he gave it in the form of pills, one of which, containing about an eighth of a grain, was ordered three, or occasionally four, times a day. It was well borne, and did not interfere with the digestion. In some cases the treatment was continued for six or eight weeks, without producing colic or other disagreeable symptoms. The total number of syphilitic cases in which it was given internally was thirty-five (twenty-six men, six women, and three young children). In five of these there was swelling of the gums and salivation. Mercury was found in the urine after the third dose. Its therapeutic value was especially remarkable in macular and tubercular syphilides and in syphilitic psoriasis of the palm and the sole. Syphilitic rash and slight relapsing forms yielded to the treatment in from two to four weeks; in syphilitic affections of the mucous membrane, and in papular and pustular eruptions, from four to six weeks were required. Multiple enlargements of glands were but little affected by it. In the case of children of from two to four years old, doses of about the fifteenth of a grain were well borne twice daily.

THE DECAY OF BODILY STRENGTH IN TOWNS.

OTHERS besides Lord Brabazon must have remarked the steady flow of population which has set in, especially of late years, from the country districts to the towns, and must have asked themselves, as they reflected on the changed conditions, the high working pressure with intermissions of enforced idleness, and the unwholesome home life which awaited many of those immigrants, how far in the end the nation would be a gainer by the interminable process. So long as our manufacturing and shipping industries continue to maintain a fair measure of prosperity there is little likelihood that the influx into the towns will be seriously checked. Its influence for good or evil on the physical state of our

people must therefore greatly depend upon our securing for them in their changed mode of life the surroundings necessary for healthy development. It would be difficult to show by precise statistics how far the work of degeneration has progressed among our poorer urban population. For our own part, we are not disposed to accept, without due scrutiny, any random alarmist rumours as to a progressive shortcoming in the national vigour. It must, however, be generally allowed that until a recent date little care has been taken to protect the poorer inhabitants of our cities against the evils of overwork, overcrowding, mismanagement in household arrangements and in food and drink, and other insanitary conditions to which they are almost necessarily subject; and if this negligence be allowed to continue, the logic of facts will not fail to convince us of a suicidal error. There is therefore good reason why schemes now on foot for the better housing of the poor, the better allotment of working time, and plans which like these tend to healthy living should not want substantial support. We would also draw attention to the great importance of care in the physical training of children, by rendering gymnastic exercises a compulsory part of education, and we are reminded by another article in the *Nineteenth Century* that sufficient attention has not been paid to the necessity for leaving here and there in districts extensively built upon open spaces for public recreation. Where common land is not available, it might well become the Legislature to order the allotment of certain portions of enclosed land for this purpose.

THE MEDICAL ACT, 1886.

FROM the frequent inquiries that have been addressed to us, there appears to be some doubt as to the effect the new Act will have on practitioners whose names are now registered. It may therefore be as well to point out that gentlemen whose names are now upon the Medical Register will not have to re-register. Existing single diplomas not yet registered—as, for example, the M.R.C.S.—can be registered up to Tuesday, May 31st, after which date degrees and diplomas cannot be registered, unless they have been conferred after a qualifying examination in medicine, surgery, and midwifery, held expressly for the purposes of, and under the conditions stated in, the Medical Act of 1886. The Act, however, gives power to the Privy Council to postpone "the appointed day" to any day not later than the end of June—a power on the exercise of which, we have reason to believe, the Medical Council is likely to be consulted at their meeting next week.

ANTISEPTIC MIDWIFERY.

IN a report by Dr. K. Inoieffs of the work done in the Lying-in Institution in connexion with the Golitsinski Hospital in Moscow for the year 1886, the advantage of antiseptic midwifery, which is strictly carried out there, is evident, as out of 541 cases there were but 2 deaths. Some of the statistics, which are very carefully kept, may be of interest. The largest number of births occurred, as it is popularly believed they do, at night, 145 taking place between midnight and 6 A.M.; the numbers corresponding to the remaining three-quarters of the twenty-four hours being 131 from 6 A.M. to noon, 107 from noon to 6 P.M., and 144 from 6 P.M. to midnight. There were 14 abortions and 9 cases of twins; three births took place in the street. Of the remaining 501, 478 were vertex presentations, 15 breach, and 8 transverse. In 9 of the 14 cases of abortion the ovum was removed mechanically. When there was considerable hæmorrhage and the os was not dilated, a hot vaginal injection of carbolised water was given which was, as a rule, successful. Twice, a plug consisting of a long strip of cotton-wool moistened with glycerine and iodoform was introduced by means of the speculum, as much as possible being inserted into the cervical canal, and subsequently, when the os was sufficiently patent, the finger was introduced and the uterine contents removed. In one case there was a slight amount of perimetritis and in two a single rise of temperature. In one case a spatula was cautiously used to assist the irrigation, and once the contents were removed with the help of a sharp hook. Apart from cases of placenta prævia and abortion, there were 29 cases of hæmorrhage, 6 of these occurring in primiparæ; six took place during the first and second stages of labour, the rest in the third stage and post-partum. The treatment adopted was, during the first stage, to plug, and when the os was sufficiently dilated to rupture the membranes. If there was rigidity of the os, narcotics were given. When uterine atony was the cause, massage, the application of ether to the abdomen, hot injections, and (after the birth of the placenta) ergot were resorted to. As to operations, episiotomy, or a double V-shaped incision of the perineum was performed five times, no sutures being inserted afterwards. Twice the os uteri was incised; twice the prolapsed cord was replaced; perineal sutures were required in 20 cases. In the performance of the operation the most careful antiseptic precautions were taken; in 16 cases the union was complete. Retention of membranes required the introduction of the hand into the uterus once, but in 14 cases the placenta had to be artificially extracted, being completely adherent once, and partially so thirteen times. Labour was induced prematurely for contracted pelvis three times, twice by the injection of water at 28° R. (95° F.) through a tube passed into the cavity of the uterus, between the uterine wall and the fœtal membranes; in the third case it was induced by the introduction of an elastic sound into the uterus. Podalic version was performed eleven times, and the forceps applied fifteen times. Craniotomy was performed twice.

REPORT ON FACTORIES AND WORKSHOPS.

THE annual report of the Chief Inspector of Factories and Workshops is, as usual, of considerable interest. We are pleased to note that it speaks encouragingly of a revival of trade in nearly all branches of industry, which was particularly noticeable towards the end of the year. Of the many industries in which an improvement is noted, we are glad to find the linen trade is in a flourishing condition, as likely to encourage the growth of flax in this country, a matter of considerable importance to agriculturists in these depressed times. The invention, too, of a new scutching machine, by which 30 per cent. of fibre may be secured from the straw instead of about 20, will also aid in this direction. But the chief interest in the report, so far as we are concerned, is contained in the information it affords respecting the precautions taken in various industries to protect the workpeople from injury or loss of life or health. The total number of accidents last year arising from machinery alone amounted to no less than 6656, of which 316 were fatal—a formidable return, but one which, we are pleased to find, is gradually diminishing owing to precautions enforced and by improvements in the construction of the machinery employed. Thus many accidents occur from unfenced hoists, and these are generally serious; Mr. Meade King in the report deals at length with this, and introduces us to several kinds of hoists which, whilst simple and inexpensive, protect the employed from accident and the employer from liability. Mr. Lakeman, another inspector, has devised a saw guard, which is calculated to prevent those serious accidents that so frequently occur from the use of the circular saw. Mr. Lakeman has also induced Mr. Rockhill

to perfect a system for stopping shafting and machinery instantly, so that a person caught by machinery can immediately be released. The ventilation of factories and workshops receives considerable attention, and several effective and simple methods suitable to small factories are described. We regret to find that the enactments of the Truck Act are still evaded in some districts. One of the inspectors, Mr. Hoare, states the following as of recent occurrence. "A chain-maker informed me this week that he paid his master 15*s.* for gleeds which he could buy for 7*s.*" The enormous profits made by the employers by selling gleeds enables them to sell common chains at cost price, to the great injury of the workman, who, in addition to his loss on the transaction, is fined if any of the links are the least faulty. One wonders that the workmen, in their own interests, allow such a system to continue. But it is, in reality, a question of work or no work, and any complaint on their part leads not only to their present discharge, but prevents their getting employment in the future. It is satisfactory to note that the prosecutions for offences against the Factories and Workshops Act are not for very grave breaches of the law. Still, they are numerous enough to show that in the absence of constant supervision very grave abuses would speedily spring up. Fortunately, the character of this report assures us that the inspectors are keenly vigilant, and, moreover, are themselves interested in the work and ready to receive and to suggest anything that will improve the conditions of health and add to the security of life and limb in our workshops and factories.

THE MEDICAL SOCIETY OF LONDON.

THE annual Oration (which we publish in another part of our present issue) was delivered by Sir Wm. Mac Cormac at the commencement of the conversazione on Monday last, Dr. Hughlings Jackson, F.R.S., President, in the chair. Sir Joseph Fayrer proposed, and Mr. Croft seconded, the vote of thanks to the orator for his interesting address on Abdominal Surgery. The conversazione was, as usual, a great success, the music being provided by the string band of the Royal Artillery. Specimens of art pottery, by Messrs. Martin Brothers; recent etchings and mezzotints, by Mr. R. Dunthorne; photographs of landscapes, by Mr. Vernon Heath; Japanese screens, by Mr. W. Anderson, F.R.C.S.; oil paintings and water-colour sketches, by Mr. G. E. Cook; book of engravings after Rubens and Vandyck, by Mr. Walter Pye, F.R.C.S.; the Remington Standard Type-writer, by Messrs. Wyckoff, Seamans, and Benedict; together with some old books, including the MS. of the Rev. John Ward, which contains the only authentic account of the cause of Shakespeare's death, besides other objects of interest, were provided for the delectation of the Fellows and their friends. We may add that the entrance hall, staircase, and rooms were lighted by the patent safety lamps of Messrs. Defries, which had been lent for the occasion.

PYORRHŒA ALVEOLARIS.

MR. NEWLAND PEDLEY, F.R.C.S., read a paper at the Odontological Society upon the above subject. Pyorrhœa alveolaris is characterised by conditions as follows:—The mucous membrane, especially that adjacent to the teeth, is deeply congested, tumid and thickened, and detached from the necks of the teeth and from the roots. A thick fetid discharge may often be pressed up between the teeth and mucous membrane, which gives to the breath a very repulsive odour. Later, the alveoli become absorbed, and at times more or less denuded, whilst the fangs of the teeth become coated with a layer of thin, hard, green-brown tartar. Ultimately, the disease progressing, the teeth, one after another, drop out. The pathological changes which take place are hypertrophy of the muco-periosteal fold around the teeth, accompanied by dilatation of capillary loops, enlargement of the papillæ, and rapid proliferation of epithelial cells. Later the gum becomes firm and contracted, and displays increase of fibrous tissue. The changes which go on in the socket have not been yet satisfactorily worked out, but the examination of the jaws of some carnivora which were apparently affected with pyorrhœa alveolaris would lead to the supposition that there is osteitis of the alveolar process spreading towards the apex of the socket. There are many differences of opinion as to the causes: some maintaining that it is of parasitic origin and due to a specific bacillus, but there is no good proof of this; others that it is catarrhal, and an extension of inflammation of the mucous membrane; others that it is due to the irritation of small deposits of hard tartar under the edge of the gum, but this is plainly not the case, for the disease may be far in advance of the deposit, and in some cases there is not any to be found. It is probably due to some constitutional condition, and the fact that it is often symmetrical, and frequently hereditary, gives support to this view. It occurs in the mouths of patients whose health has been undermined by debilitating influences and injudicious habits of living; it is a common sequel of malarial fever in America; young persons recovering from eruptive fevers are sometimes subjects of pyorrhœa alveolaris; and frequent pregnancies are a fruitful source of the disorder. Attention has been lately drawn to the shedding of the teeth in tabes dorsalis, but it does not by any means seem to be a constant symptom. Mr. Bland Sutton has found that premature loss of the teeth is a very common feature in cases of rheumatoid arthritis in animals, and has also met with it in mollities ossium and other wasting diseases. Magitot, who views the alveolar-dental periosteum as a ligament, and not of the same nature as osseous periosteum, calls the disease symptomatic alveolo-arthritis, and mentions especially as causes chronic Bright's disease and glycosuria, in which latter, he says, the phenomenon is absolutely constant.

THE POPE ON ALCOHOLISM.

LEO XIII., even more than his predecessor Pius IX., has made the social amelioration of the masses an object of Catholic concern, mobilising the forces of the Church and even calling on public hygiene to assist in the philanthropic crusade. The ravages of intemperance, particularly in the United States of America, have just evoked from him a strenuous charge to the clergy in that part of the world to continue their efforts for the removal of the scourge, and to make their flocks an example of moderation and sobriety to all outside the fold. In a Brief addressed the other day to Monsignor John Ireland, Bishop of S. Paul, Minnesota, he congratulates him on the success which has followed the organising of the Catholic Union for the observance of total abstinence (*Unio Catholica perfectæ abstinentiæ sequendæ*), and adds that too much praise cannot be given to those pastors in the United States who in the late plenary council at Baltimore have formulated a "plan of campaign" against the abuse of alcohol, with its bequest of disease and misery to generations yet unborn. He commends the Bishop and his clergy for themselves reinforcing their precept by personal practice, and charges them zealously to save their Church and their native land from the innumerable calamities with which both are menaced by the vice of alcoholic excess (*ut tot calamitates ex eo vitio Ecclesiæ ipsique patriæ impendentes strenue avertere contendant*). The Catholic Union, to which the Pope alludes, now numbers over one hundred thousand members, while it is at the same time gratifying to hear that the co-operation of the medical profession in what is nothing less than a great movement, sanitary as well as social, is also noted with commendation

at the Vatican. The Church, whether Catholic or Protestant, in a cause so humanitarian, may always count upon medicine and its practitioners for loyal and effective support.

MEDICAL OFFICERS OF HEALTH.

THE Sanitary Authority of West Ham had last week under consideration the question whether they should appoint a medical officer of health who should devote the whole of his time to the district, or whether they should elect a medical man who had other means of adding to his income. The Sanitary Committee had recommended that the former course should be adopted; but the Town Council sitting in committee had not approved this recommendation, and the corporation have now by a small majority rejected an amendment that an officer be appointed who should give the whole of his time to his duties. This decision is distinctly unfortunate. In a district of the size and population of West Ham there is abundant material for the work of one man, and in engaging a partial service the corporation are by no means doing the best for their borough. There is only one reason for satisfaction to be found in this decision. If the feeling of the corporation is to be judged from the statements of its members, the inadequate remuneration of £300 a year would be given to the officer, who would be expected to devote a special knowledge of preventive medicine and the whole of his time to the health duties of West Ham. It is needless to add that this sum ought to be, and would be, insufficient to procure for the corporation the services of anyone fully competent to perform this important duty. West Ham should have learnt by its own experience the necessity for active sanitary administration, and it is to be regretted that the corporation should now be prepared to leave the borough without the aid of an officer of the best professional standing.

THE INFLUENCE OF TEA, COFFEE, AND COCOA ON DIGESTION.

DR. JAMES W. FRASER, in the recent number of the *Journal of Anatomy and Physiology*, has recorded the results of an interesting series of experiments on the action of our common beverages on stomachic and intestinal digestion. The experiments have been most carefully arranged from a physical standpoint, and give us some valuable hints on the digestion of the chief alimentary principles, but they have no bearing, it should be mentioned, on individual variations of human digestion, or on the influence of the various glands in preparing the gastric or intestinal juices. They are, however, of much value in showing how standard preparations of the peptic and pancreatic ferments are modified in action when our ordinary daily beverages are allowed their free action on the digestion of various articles of food. The digestive processes were carefully investigated, and absorption was imitated by a proper dialysing arrangement. An artificial peptic juice, and afterwards an artificial pancreatic juice, were employed, and the amount of nitrogenous matter dialysed was most carefully estimated. The food stuffs experimented on were raw and cooked serum and egg albumens, raw and cooked myosin, syntonin, alkali albumen, casein, gluten, starch, and oleine. The results obtained from an exhaustive series of experiments and analyses show that all the three typical infused beverages—tea, coffee, and cocoa—retard the digestion and absorption of all the nitrogenised proximate principles of dietetic substances when peptic and pancreatic digestion are taken together, and that they uniformly retard peptic digestion, although tea may assist the diffusion of peptones from the stomach. Pancreatic digestion is also uniformly retarded, and diffusion thereafter is but rarely assisted, so that neither of them compare advantageously with water as a standard beverage for experimental investigations. A summary of dietetic advice is added to Dr. Fraser's observations, which will, in the main, agree with that which is now given by our best authorities in cases of dyspepsia; and we are glad that experimental inquiries afford so strong a basis of support to empirical clinical observations:—

"1. That it is better not to eat most albuminoid food stuffs at the same time as infused beverages are taken, for it has been shown that their digestion will in most cases be retarded, though there are possibly exceptions. Absorption may be rendered more rapid, but there is a loss of nutritive substance. On the other hand, the digestion of starchy food appears to be assisted by tea and coffee; and gluten, the albuminoid of flour, has been seen to be the principle least retarded in digestion by tea, and it only comes third with cocoa, while coffee has apparently a much greater retarding action on it. From this it appears that bread is the natural accompaniment of tea and cocoa when used as the beverages at a meal. Perhaps the action of coffee is the reason why, in this country, it is usually drunk alone or at breakfast, a meal which consists much of meat, and of meats (eggs and salt meats) which are not much retarded in digestion by coffee. 2. That eggs are the best form of animal food to be taken along with infused beverages, and that apparently they are best lightly boiled if tea, hard boiled if coffee or cocoa, is the beverage. 3. That the casein of the milk and cream taken with the beverages is probably absorbed in a large degree from the stomach. 4. That the butter used with bread undergoes digestion more slowly in presence of tea, but more quickly in presence of coffee or cocoa; that is, if the fats of butter are influenced in a similar way to oleine. 5. That the use of coffee or cocoa as excipients for cod-liver oil &c. appears not only to depend on their pronounced tastes, but also on their action in assisting the digestion of fats."

A JUBILEE SUGGESTION!

MR. T. W. RHYS DAVIDS has written to the *Academy* to suggest that the Jubilee of the Queen and the Jubilee of the University of London may best be celebrated by changing the present title of the University to that of the "Imperial University," because it is an "Imperial Examining Board." And yet we are supposed to believe that the *Academy* is a serious and severely critical paper, and that its correspondents are really in earnest, even when they make such an audacious proposal as this must seem to the authorities that be. Surely the writer must be intent on indirectly advocating a Teaching University for London, although we do not find his name among those who support the movement.

BURIAL DURING A TRANCE.

THE reading public have lately been startled by the shocking details of a reported case of burial during a state of trance. The history of this occurrence—which relates how a Russian officer was interred in his family vault forty hours after his supposed death, and how his body was found a fortnight later turned with the back upwards in his coffin, the lid of which had been partly forced open, with face torn, and hands gnawed and still bleeding—appears too horrible to be true. Instances of living burial have at various times been reported. The authenticity of some such has been vouched for on good authority, though even these, it may be, have not reached us without the spectral halo of an oft-repeated horror. Some others, which owe their apparent credibility to the signs of movement due to cramp-like spasms occurring after death, may probably be dismissed at once as fictitious. We would fain hope that the most recent and appalling case, to which we have referred, is one of those to which excited popular imagination has added, as it is wont to do, particulars as dreadful as unfounded.

It is certainly somewhat difficult to understand how a human being could live for a fortnight, shrouded, and in the confined space of a coffin, without nourishment of any kind, without fresh air, in a state of trance, and awake at the end of that time possessed of sufficient strength to struggle desperately and to lacerate himself as this unfortunate officer is said to have done. As a matter of fact, moreover, it is hardly conceivable that the eye of a careful and educated observer should mistake the true meaning of the collective signs of death or fail to note their absence in a case of stupor, however death-like to the ordinary onlooker.

ON THE VALUE OF THE HÆMORRHAGE IN THE TREATMENT OF WOUNDS.

PROFESSOR TURAZZA, in the *Gazzetta degli Ospitali* of April 13th publishes a note showing that hæmorrhage from wounds, when not due to the lesion of large vessels or carried to excess, is of small importance and does not interfere with primary union. He believes that the rule generally laid down regarding the first dressing of a wound—viz., to secure complete arrest of hæmorrhage and to apply firm compression—though excellent, is not important. Professor Turazza relies on perfect disinfection of the bleeding surface, as far as within reach, by means of weak solutions of phenic acid or corrosive sublimate. He then leaves the cavity of the wound full of blood, without any doubt as to primary union, the edges of the wound being very accurately sutured. As the result of his experience he formulates a new rule in surgery—"that in wounds perfectly disinfected and free from foreign substances the effusion of blood is not a source of danger, but the reverse, for the extravasated blood fills up the cavity of the wound perfectly, preventing the formation of empty spaces and rendering both compression and drainage superfluous, and, further, the organisation of the clot favours healing." Professor Turazza also expresses himself decidedly averse to the use of the drainage-tube, because it increases septic risks, and may remove from the cavity into which it is inserted fluids which in an aseptic condition may be useful by reabsorption. He advises the restriction within the narrowest limits of the drainage-tube, and would deprecate its use in even ovariotomy, hysterectomy, and amputation of the breast, thinking it more dangerous than useful.

THE INCOME OF DOCTORS.

OUR contemporary the *Graphic*, accepting the estimate of Dr. Thurstan in our columns, that the average income of medical men does not much exceed £300, or, including house-surgeons, ship surgeons, and assistants, even £200, recommends as a—if not the only—remedy, combination. This remedy is one that medical men are not fond of. There is something in the very nature and property of the profession which deters its members from combining to decline help to those in need. But it may be tempted to try the ways of less sensitive classes. There is so much shabbiness in the remuneration of medical services. In many people, and in some classes of the community, there is such a determination to treat medical services ungenerously that it would do good to combine. It would lead to a more wholesome estimate of the value of medical service and advice. It would correct the vulgar impression that people have a sort of natural claim on doctors at any hour of the day or night. No doubt it would cause some surprise, not to say scandal, if the whole profession were to unite to decline to answer the call of those who see no necessity to pay doctors, but think doctors bound to attend them. But a little reflection on the part of reasonable people would soon lead them to a more correct judgment. The difficulty is, as our contemporary says, in getting combination among medical men. There is so little organisation and so much competition that the patient who owes a medical bill to one doctor is only too sure of being able to secure the services of another, and, when he fails to be reckoned with, of a third medical man.

THE COMPULSORY ISOLATION OF INFECTIOUS PATIENTS.

A CASE has just arisen at Gosport which illustrates a difficulty that has more than once occurred in the administration of the clauses of the Public Health Act which deal with the spread of infectious diseases. Under Section 124 of that statute it is enacted that, where a sanitary authority have provided an infectious hospital, they may, by order of a justice who acts under a medical certificate, remove to that hospital any person who is suffering from any dangerous infectious disorder. But amongst the conditions necessary to the procuring of the order it must be shown that the person in question is "without proper lodging and accommodation"; and it is the precise meaning of this condition that gives rise to difficulty. On the one hand, it has been contended that since the statute deals with public rather than individual health, and since the intention of the section in question is clearly indicated by the heading "Provisions against Infection," under which it is placed, the quality of the accommodation referred to has to do not so much with the welfare of the patient as with the risk of danger to others. But, on the other hand, it is held that since the section admits of the compulsory removal, quite apart from the question as to the quality of the accommodation in so far as this may affect others, in cases where the patient is in a room occupied by more than one family, or is on board any ship or vessel, the reference to proper lodging and accommodation has to do with the welfare of the patient, and not of the public, apart from the two exceptional conditions specified. The latter has generally been the customary ruling of magistrates, and it was so in the case which has just arisen. A young woman, who was a tailoress and who lived with her mother, was found to be suffering from small-pox at Gosport, and in the house were twelve pairs of trousers she had made for the Marines. The danger to others was obvious, both owing to the locality and circumstances under which the patient was placed and owing to the special nature of her calling. But the magistrates, ascertaining that the quality of the accommodation, especially as to cubic space, which was available for the sick woman in her own house was sufficient for her own proper treatment, decided that they had no power to order her compulsory isolation in the hospital tents provided by the sanitary authority. This case indicates the legal aspect of this compulsory removal clause; and, as far as we are aware, there has been no appeal against the position which the magistrates have taken up, either on this or on other similar occasions. Fortunately, the isolation of the infectious sick is but rarely dependent on the exercise of compulsory powers. Where a really proper hospital, of a reasonable attractive character and with good administration, is provided, hundreds of persons are every year only too willing to avail themselves of the advantages thus afforded to them.

THE MORTON LECTURES ON CANCER AND CANCEROUS DISEASES.

SIR JAMES PAGET, at the unanimous request of the Council of the Royal College of Surgeons, has consented to give the first lecture on Cancer and Cancerous Diseases at a date to be announced later (in all probability towards the close of the year). The lecture will be the first given on the above subject in compliance with Mr. Morton's donation.

THE UNIVERSITY OF LONDON.

THE annual meeting of Convocation of the University of London will take place on the 10th inst., when the report of the Annual Committee will be presented. Although the scheme for the reconstitution of the University proposed by the Special Committee of the Senate has been circulated as an appendix to the report of the Annual Committee, there is no resolution on the agenda in reference to it. It remains to be seen whether the subject will be discussed at this meeting. Probably some notice may be taken of the matter on the motion to receive the report; but there is no doubt that Convocation will have to be specially convened to consider so important a question. The chief resolutions on the agenda relate to the initiation of local examinations by the University. The election of graduates to serve on the Annual Committee will take place at this meeting.

THE SANITARY CONDITION OF CLERKENWELL.

AT a meeting of the Clerkenwell vestry last week orders were given for the removal of twenty-five Greek gipsies who had gained admission into a small house in the parish, which the medical officer of health stated had long since been condemned as unfit for human habitation. It may well be asked how such a house, which we presume has been reported under Torrens' Act, has for a long time remained in this condition. The vestry have ample powers to cause the demolition or repair of such premises, and the neglect to utilise them is a distinct reflection upon their sanitary administration. A member of the vestry present at the meeting drew attention to the generally bad condition of the courts of the parish, as being small, ill-lighted, and ill-ventilated, whilst the houses were dilapidated, with inefficient water and other sanitary appliances; he stated that he thought all the courts should be abolished. The medical officer added that there were twenty-six courts that should be condemned, while another vestryman expressed the opinion that all the courts of the parish were a disgrace. The Mansion House Council would be doing good service if they were to ascertain the dates at which these courts have been reported by the medical officer, and the steps which have been taken since. It is now nearly two years since this parish was the subject of inquiry by a commissioner appointed by the Home Secretary, and it would be interesting to know if his report contains the information which is wanted, and which would be useful to those who desire to see the sanitary condition of London improved.

DEATHS OF EMINENT FOREIGN MEDICAL AND SCIENTIFIC MEN.

THE deaths of the following foreign medical and scientific men are announced:—Dr. W. Hack, Professor of Laryngology and Dermatology in the University of Freiburg in Baden, was last week found dead, apparently from heart disease, upon his tricycle, which was standing still in the middle of the road near Staufen in the Untermunsterthal.—Dr. Max Geminger, Conservator of the Munich Zoological Museum, and a well-known entomologist.—Dr. Joseph Lerch, Extraordinary Professor of Zoology and Director of the Zoo-chemical Institute in the German University of Prague.—Dr. Vladimir T. Hörschelmann, Privy Councillor, and late holder of a high position in the St. Petersburg district, Military Medical Staff. At the time of the Crimean war he was senior surgeon of the Preobrashenski Regiment.—Dr. Edward Meyer, who is described as the Nestor of Livonian practitioners, being at the time of his death eighty-two years of age, and having taken the M.D. degree at Dorpat in 1827.—Dr. Hellinger, one of the oldest and most respected medical officials in the Rhine provinces.

PARALYSIS OF THE SENSE OF TASTE.

MANY observations point to the conclusion that any function of the living body may be annulled by the action of some specific agent. The selective action of drugs is one scientific reason for their employment in the rational and the empiric treatment of disease. Some arguments could be found to sustain the hypothesis that the treatment of symptoms is a real way of treating the disease, that suppression of all symptoms by the employment of various agents would be equivalent to the suppression of the causes of the disease. Doubtless this might hold good in some cases, but probably not in all, and the present state of knowledge gives us no warrant for asserting anything absolute on the matter. It is known that the leaf of Gymnema sylvestre, an asclepiad, has the property of abolishing the functions of tasting bitter and sweet things, of paralysing certain fibres or nerve endings of the gustatory nerves; for there is much evidence leading to the belief that there exist different sets of fibres subserving the various sensory functions, not only in the sphere of taste, but in the department of any other general or special sense.

POISONOUS BISCUITS.

TWO children were recently successfully treated at the Melbourne Hospital for symptoms of poisoning, and from inquiries which were made it was supposed that their illness arose through eating some biscuits, the colouring matter of which was of a poisonous character. Similar biscuits to those which the children had eaten were obtained and forwarded to the Government analyst for report. The analysis showed that the green colouring matter on the biscuits submitted for examination was arseniate of copper. By the direction of the President of the Central Board of Health, the police in the various suburbs visited without delay the various establishments where biscuits are sold, and seized all tins containing any biscuits with green colouring matter on them. In all, over eighty tins were confiscated, and by the praiseworthy promptitude of the authorities a fertile source of danger to the infant population of the colony has been removed.

MEDICATED WINES.

WE think the Board of Inland revenue are right to place some restriction on the sale of medicated wines. Many of these preparations consist of ordinary foreign wine, often Marsala or sherry, to which some medicinal substance has been added. It is to be feared that in some cases they have been used in undue quantities for the sake of their alcohol, while in others the consumers have not known that they were drinking strong wine. In future a wine licence will be required by every person who sells them.

THE TREATMENT OF MORPHINOMANIA.

WE have recently received two publications on the treatment of this important and increasingly prevalent complaint. The first, by Dr. Oscar Jennings of Paris, is "Sur un Nouveau Mode du Traitement de la Morphinomanie," and is illustrated by nearly thirty sphygmographic tracings. The other and smaller work, covering much the same ground, is entitled "Considérations sur la Traitement de la Morphinomanie," and has been prepared by Dr. Jennings in conjunction with Professor Benjamin Ball, the well-known alienist. The drugs chiefly relied on for the cure of these patients are nitro-glycerine and sulphate of sparteine. The former is given in tabloids or as a 1 per cent. alcoholic solution, whilst the latter is administered hypodermically usually in doses of from two to four centigrammes. Sparteine has hitherto been but little used in medicine, but its action on the cardiac inhibitory ganglia is so marked that

it seems not improbable that it has a brilliant future before it. The effects on the pulse are admirably illustrated by the sphygmographic tracings, and the success attending the new method of treatment is especially gratifying.

TEA AMBLYOPIA.

WE read in a contemporary that M. Molchanoff, a Russian, who is reputed to be the wealthiest tea merchant in the world, has arrived at Paris from Hankoy with the intention of placing himself under the treatment of Dr. Charcot and an experienced French ophthalmic surgeon. The great tea magnate is suffering from amblyopia, which, it is said, is the result of the prolonged practice of tea-tasting. It is not unlikely that tea taken in excess might produce amblyopia similar in character to those toxic amauroses which result from the abuse of alcohol, tobacco, opium, and quinine; but we are not aware that this form of amblyopia has been particularly described. Wecker does not mention it in the last volume of his large work just completed, and it is not mentioned in the Real Encyclopedie, nor in the Gräfe Sämisch Handbuch. Tea is hardly indulged in in this country to a sufficient extent to produce any marked effects upon the nervous system, but it is undoubtedly a sedative and acts powerfully upon the heart.

THE HEALTH OF THE HOME SECRETARY.

WE learn that the absence from the House of the Right Hon. H. Matthews has been caused by his suffering from slight ulceration of the cornea of one eye, which necessitates some temporary rest, but involves no serious consequences. He is under the care of Mr. Brudenell Carter.

FOREIGN UNIVERSITY INTELLIGENCE.

Brussels. — The students have presented M. Ernest Rousseau, the pro-Rector, with his bust.

Cracow.—Dr. Anton Rosner, Extraordinary Professor, has been elevated to the position of Ordinary Professor of Dermatology and Syphilis.

Giessen.—Professor Schwarz is expected to succeed Professor Kaltenbach, who has gone to Halle.

Königsberg.—Dr. A. Vossius has been appointed Extraordinary Professor.

Munich.—Professor Gietl is resigning his hospital appointment, after fifty years of service.

Trieste.—The local legislative body has commenced to take steps for the establishment of a university in which Italian will be the language in which instruction is to be given.

THE efforts which are being made by the authorities with the view of stamping out rabies among the deer in Richmond Park have not produced the results which were anticipated. On the 4th inst., the official veterinary inspector reported at the Richmond Petty Sessions the slaughter of six more animals since the last sitting of the bench. Of 1500 deer in the Park over 130 have now been killed, and it is expected that many more will have to be slaughtered before the epidemic comes to an end.

MR. J. S. MORGAN has withdrawn the condition attached to his promise of £10,000 in aid of the funds of Guy's Hospital, and has made it an absolute gift. The fund now amounts to £72,000.

A VIENNA firm has received a telegram from Buenos Ayres, stating that cholera has broken out afresh there. There have been, it is reported, twelve cases in Tucuman, in the interior, and several in the city of Buenos Ayres itself.

WE understand that Messrs. Henderson Bros., managing owners of the Anchor Line of steamships from Glasgow to New York, have decided to offer to members of the medical profession desirous of attending the International Medical Congress to assemble at Washington in September next return tickets to New York for £20, giving the best accommodation at this low rate.

MR. C. R. THOMPSON of Westerham, Kent, was thrown out of his carriage on the 28th ult., and sustained such injuries that he died on the 29th, never having recovered consciousness. At an inquest held on the 30th the jury returned a verdict to the effect that death was due to a fracture of the base of the skull and concussion of the brain.

WE regret to record the death at Chenawan, in the Punjaub, of Dr. G. J. Shand, of the Indian Medical Service. The deceased entered the service in 1881, and at the time of his death, which occurred on the 1st ult. from typhus fever, held the appointment of superintendent of the Chenawan Central Gaol.

PROFESSOR VICTOR HORSLEY, F.R.S., will read a paper "On the Operation of Trephining during the Neolithic Period in Europe, and on the probable method and object of its performance," at the Anthropological Institute, 3, Hanover-square, on Tuesday, May 10th, at 8.30 P.M.

MR. H. R. BARRAUD of Oxford-street has submitted to us an excellent cabinet photograph of the late Dr. Alfred Meadows.

DR. HUGHLINGS JACKSON has received the honorary degree of LL.D. Glasgow.

ABSTRACT OF

LECTURES ON MALARIAL FEVERS.[1]

BY W. NORTH, B.A., F.C.S.,
LATE RESEARCH SCHOLAR OF THE GROCERS' COMPANY.

LECTURE II.

LOCAL CONDITIONS AFFECTING THEIR DISTRIBUTION AS STUDIED IN THE PROVINCE OF ROME.

IN the previous lecture the general relations of malaria to latitude, altitude, water, and climate have been shown to hold good for a continent, for an individual country, and for a province of that country. It remains to show how far they hold good for much smaller areas. This involves consideration in detail of localities, and with regard to each the following points demand especial attention:—1. Local conformation of the soil. 2. Constitution of the soil. 3. Water. 4. Altitude. 5. Cultivation. 6. Population. 7. Drinking-water. 8. Meteorology.

Local conformation of the soil.—The peculiar nature of the Roman Campagna, and the fact that it is by no means a plain in the generally accepted sense of the word, may be illustrated by the following examples. The neighbourhood of the Isola Farnese is exceedingly broken up by streams running in valleys with almost precipitous walls, often fifty metres and more in height. Of more undulating country, but still very broken, the neighbourhood of Tre Fontane, to the south of Rome, affords a good example. Here there are valleys whose bottoms are not more than from 12 to 16 metres, and whose sides may rise to 50 or even 60 metres above sea level. The streams which flow through these valleys are, for reasons to be considered later, liable to frequent flood, and deposit an enormous amount of mud and silt. Of true plain, the valley of the Tiber, the Pontine

[1] Delivered at the London Institution, April 25th, 1887.

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region, and the low land on the coast line may be cited as the best examples.

Constitution of the soil.—It has been shown repeatedly that geology has little to do with malaria, except in so far as it affects the physical nature of the soil. The fact that the greater part of the Roman Campagna is volcanic is of material importance to the subject, inasmuch as it has a great influence on the distribution of the water underlying the surface soil. There is frequently an almost impervious layer of lithoid tufa, full of saucer-like depressions, which hold water and render the soil with which they are filled and hidden wet and boggy. In some cases these depressions are crater-like and of large size, having once been, to all appearance, volcanic lakes. These larger depressions are found chiefly round the base of the extinct volcanoes of Albano and Bracciano. The best example, perhaps, is that of the Val d'Ariccia, below Albano, which is nearly a mile across, exceedingly fertile, and very unhealthy. After heavy rain the whole valley becomes a bog, there being apparently no adequate means of escape for the water. This valley is known to have been a lake, and to have been drained in order that the alluvium which almost filled it might be cultivated. The volcanic soil holds water like a sponge, and only when it is saturated does the water issue from the hill-sides as springs, and then chiefly because it has met a layer of hard tufa which stops its downward course. Good examples of this are to be seen near Tre Fontane. Some idea of the water-holding capacity of this volcanic soil may be gathered from the following facts. In 1876 the water in the torrents in the district of Velletri began to show an increase about Oct. 20th. The total amount of water which had fallen over the drainage area since the first rains of September was equal to a depth of 25 centimetres, and represented a total of 34,000,000 cubic metres of water. In 1877 the flow did not begin till even later—viz., in the first fortnight of November, after a rainfall of 17 centimetres or a total volume of 23,000,000 cubic metres of water. The Travertine area below Tivoli is very interesting as an example of an exceedingly malarious district covered to a varying depth with a calcareous stone excellent for building purposes, and on the top of which the soil is often so thin as to render cultivation impossible.

Altitude.—The general fact that malaria diminishes and finally disappears as we ascend is undisputed. The remarkable fact about it is that a very small elevation above a malarious soil affords a very efficient protection to the inhabitants. The practice in such countries of building the houses on poles, on the tops of tombs, and similar places, is evidence of this; but it would also appear that there is an undoubted difference, as far as the risk of acquiring the disease is concerned, between a house at the bottom of one of the valleys already described and one built on the top of the hills which bound them—a difference in altitude often not more than thirty metres. The neighbourhood of the Basilica of San Paolo fuori le mura, to the south of Rome, affords a very curious example of this.

Cultivation.—The ancient cultivation and the present state of the Roman Campagna have been already discussed. The relation of malaria to trees is of great interest, though but little understood. The case of Cisterna will serve as an illustration. In 1714 it was proposed to cut down a large area of macchia which lay between the town of Cisterna and the Pontine marshes. Lancisi, the Papal sanitary adviser at the time, resisted it, and successfully, on the ground that these trees opposed a barrier or filter to the malarial emanations from the Pontine region, this idea constituting what is known as the *prejudizio palustre*. Cisterna at the time was very unhealthy, and had a rapidly diminishing population. About a hundred years later these woods were cut down, and since that time the health of the place has improved and the population almost trebled. The attempts made at Tre Fontane to improve the locality by planting eucalypti hardly admit of discussion. The plantations are too young and too small to enable any decided opinion to be formed; still, there is considerable evidence that good has been done. It may be stated generally that the effect of plantations well kept and of suitable trees is to drain the soil and distribute the water, whilst the macchia before mentioned near Cisterna, consisting of stunted brushwood, undrained and boggy, was rather a means of collecting stagnant water near the town, and its removal exposed the soil to the light and air, and so without artificial drainage what was practically a bog was got rid of.

Population.—The condition of the moving population of the Roman Campagna is a very serious question. They are ill fed, ill clothed, and worse housed, and generally are placed in circumstances which render successful resistance to the violence of the climate almost an impossibility. Density of population undoubtedly drives away malaria, and we need go no further than Rome itself for a conclusive example. Since the entry of the Italians in 1870 the city has extended enormously, and parts which at that time were something more than unhealthy are now built over and fast becoming the fashionable quarter. The areas within the walls, particularly on the south, near the Porta San Sebastiano, which are still unbuilt on, have a very evil reputation.

Drinking-water.—Is the malarial infection capable of being carried by water? This is a question which is naturally of the very first importance. The evidence, such as it is, would seem to point to an emphatic negative as the answer. The healthiest parts of the city of Rome are supplied with water admittedly the best in the world, and which rises—to take the Acqua di Trevi or Acqua Vergine as an example—on unenclosed land in springs, which bubble up and cover the surface in a locality so unhealthy that to pass several nights there in August might involve risk to life, and certainly to health. There seems to be but little doubt that a supply of good drinking-water is of importance in malarious localities, but it has yet to be shown that in exchanging pond and ditch water for that of springs the inhabitants cease to take a poison into their bodies. The evidence rather points to the fact that by so doing they raise their general health and so become less liable to the disease. At all events, proof that the malarial infection can be conveyed by water is wanting, though very largely credited by the natives of countries where the disease prevails.

Meteorology will be considered in the next lecture in connexion with the circumstances under which the disease is acquired.

It may be concluded from the above facts, and numberless similar ones which might be quoted did space permit, that the malarial infection is neither wind nor water borne, that it is extraordinarily local and dependent upon local conditions for its intensity to an extent not readily believed, and that the conditions which appear to favour its development are precisely those which affect local climate.

Pharmacology and Therapeutics.

METHYLAL.

METHYLAL, which was last year investigated from a physiological and therapeutical point of view by Personali (see THE LANCET, Nov. 6th, 1886), has since been experimented upon by Nicot, and more recently by two Russian physicians—Professor V. K. Anrep and Dr. M. Motrokhin. The results obtained by the latter of these observers are described in a "preliminary communication" in the *Vrach*. In frogs hypodermic injections of from 0·2 per cent. to 0·3 per cent. of the animal's weight produced more or less profound anæsthesia, which, however, quickly passed away. The lethal dose for frogs was found to be 0·8 gramme. Reflexes were weakened, and with large doses temporarily abolished. Thus, after giving a frog 0·3 gramme of methylal, irritation of the central end of the sciatic nerve during the period of complete narcosis produced no effect, but when the animal was aroused some reflex activity returned. Irritation of the peripheral extremity of the nerve showed that the drug had produced no effect upon its reflex action. Warm-blooded animals are more susceptible to the effects of methylal than frogs, a quantity equal to 0·25 per cent. of a rabbit's weight throwing it into a deep sleep lasting from one to two hours; with larger doses, loss of coördination in the movements was first observed, then the animal fell on its side, and remained in a state of narcosis for from three to four hours, after which it quickly recovered. The lethal dose was 0·45 or 0·5 per cent. of the animal's weight. The irritability of the cortex of the cerebral hemispheres was lowered both by hypodermic injections and by the inhalation of the vapour. Convulsions due to strychnine and picrotoxine in animals subjected to the action of a moderate dose of methylal were diminished in violence, but when the strychnine or picrotoxine was given in lethal doses death was actually accelerated by methylal. Methylal

can be employed in the form of vapour for inhalation, or as a liquid for internal administration. When given hypodermically in an aqueous solution of the strength of 1 in 3, it is very painful, and the skin is apt to slough near the puncture. Dr. Motrokhin does not think methylal is likely to be of use in poisoning by strychnine and picrotoxine, except when only small quantities of these poisons have been introduced into the system. Regarding inhalations, two ounces may be inhaled, and only produce in addition to anæsthesia slight headache and dizziness. No experiments seem to have been made with a view to ascertaining the value of methylal as a surgical anæsthetic, but it does not seem to affect the heart's action perceptibly. Prof. Anrep noticed especially that the anæsthesia was more marked on the upper part of the body.

FLUID EXTRACT OF VERATRUM VIRIDE.

Dr. N. Chistovich, chief of Professor Botkin's clinic in St. Petersburg, has just published an elaborate research on the physiological and therapeutical properties of the fluid extract of veratrum viride root. He found that in warm-blooded animals the cardiac contractions were at first distinctly diminished, but subsequently they were accelerated, the primary slowing of the pulse depending chiefly on the action of the drug on the centres of the vagus, causing an increase in the irritability of its peripheral extremities. The action on the inhibitory cardiac apparatus was manifested when the accelerator nerves and the sympathetics of the vagi were divided. The secondary acceleration of the pulse was due to a paralysing effect on the central and peripheral cardiac inhibitory apparatus, as well as to a stimulating action on the central and peripheral accelerator apparatus, this stimulation being partly accounted for by the direct action of the drug and partly by the rise of arterial pressure, which was itself due both to the increased force of the cardiac beats and to contraction of the small arteries. The number of clinical observations was much smaller than those conducted in the laboratory. The doses given were usually from ten to twenty drops of the 1 per cent. liquid extract. The cases which were found to be benefited by this treatment were those of cardiac disease when compensatory hypertrophy had not been established. In these there was almost immediate improvement in the dyspnœa and anasarca, the secretion of urine augmenting considerably and the patients feeling a great deal better. In two cases where the cardiac disease was complicated by nephritis and in one where there was pleurisy with effusion the veratrum did not seem to produce any satisfactory improvement, but it was only tried for a very short time, and no attempt was made to increase the doses.

SULPHATE OF SPARTEINE.

M. Masius of Brussels, having been engaged in investigating the physiological effects of sulphate of sparteine, has come to the following conclusions:—1. In small doses it does not modify the carotid pulsations in dogs. 2. In moderate doses it diminishes the irritability of the pneumogastric, accelerates the pulsations, which decrease in amplitude, and at the same time suppresses the periodical respiratory variations. 3. In poisonous doses it induces paralysis of the pneumogastric, also asphyxia, and, as a consequence of asphyxia, a change in the pulsations, which become larger and less rapid, and then quickly smaller and smaller, till they take on the characters of "alternate pulse," and finally cease. 4. The blood pressure decreases only a short time before death. 5. It exerts in the healthy subject no effect on the urinary secretion. 6. In disease its effect on the heart is uncertain, as well as its effects on the urinary function and on the subjective condition of the patient.

COMMON SALT IN MIGRAINE.

Dr. Rabow, of Berlin, finds that half a teaspoonful or more of common salt, taken as soon as the premonitory symptoms of an attack of migraine begin to show themselves, will frequently cut it short in about half an hour; similar treatment has also proved of service in epilepsy, as was remarked some years ago by Nothnagel: the explanation being probably in both cases that a violent reflex action is set up.

On the 9th inst. an afternoon concert, conducted by Mr. Henry Leslie, will take place at Grosvenor House, by the permission of the Duke of Westminster, in aid of the funds of the Hospital for Women, Soho-square.

THE ROYAL ACADEMY OF ARTS.

It is significant of the wealth of artistic talent in this country that, although the present exhibition contains no works by such masters of the craft as Watts, Vicat Cole, Burne Jones, Calderon, Poynter, G. Richmond, and Woolner, it is nevertheless one of extraordinary merit and interest. It would seem as though the financial depression, which is naturally felt most keenly by the sensitive profession of Art—a profession which is an appendage of the luxuries, not the necessities, of life,—has incidentally served to stimulate the energies of the painters to exertion, which were not displayed, because possibly they were unnecessary, in the piping days of commercial prosperity which prevailed some fifteen to ten years since. Notwithstanding that we have passed through—if we have passed it—a winter of exceptional cheerlessness and want of light, the keen competition which the present position of Art in England renders necessary has served to produce an exhibition abounding in works of merit. Our readers will find no small recreation in a visit to this, the most popular of all the exhibitions of the metropolis.

From a purely medical and professional standpoint, we have not so much to point out as in many former years. There are perhaps fewer than usual great notabilities of our ranks who are immortalised on canvas or in marble, and incidents of the works calling for criticism from the anatomical or physiological side do not appear to be numerous. We may, by the way, remark that there is a picture of extraordinary power by S. J. Solomon called "Nature," No. 503, Gallery No. 7., that should not on any account be missed. It is a huge canvas, and the story of the hero when dispossessed of his locks by the crafty Delilah falling a victim to the bonds of the Philistines is admirably told—so admirably, that it may appear captious to point out that the Philistine in front, whose leg is half-flexed upon the thigh, would not in this position have the vasti muscles (the extensors of the leg) standing out prominent and rigidly contracted. It is not so very uncommon to find that painters who have studied the muscular system have failed to seize a correct idea of the conditions under which the muscles are contracted or relaxed, and, in their anxiety to give as much anatomy as they can, portray a contraction where it should not be found.

Amongst the portraits of medical interest is that of Dr. Walter Fergus, by Wirgman, and Sir Rutherford Alcock, K.C.B., by Arthur J. Foster. This latter, although placed too high to be perfectly examined, is conspicuous by its truth and power; it is an admirable likeness, and we would especially note the dexterity and, at the same time, the conscientiousness of the painter in his treatment of the sitter's hands. A landscape by the same painter hung on the line in Gallery No. 8, called "A Harbour at Low Tide," is an admirable bit of seaside painting, and a proof of the artist's versatility. Mr. Luke Fildes strikes new ground in two portraits of great power; and Mr. Sargent's portrait of Mrs. William Playfair will interest especially those possessed of artistic sensibility. In Gallery No. 4 Surgeon-General Maclean looks down upon us with his well-known amiable physiognomy; and in Gallery No. 5 we find Dr. Edward Waters immortalised by Frank Holl. In the lecture-room there are good busts of Sir Henry Acland, by J. E. Boehm, and of Dr. Cholmeley, by C. B. Birch.

THE GROSVENOR GALLERY.

The Grosvenor Gallery has been open for eleven years, and has suffered no falling off and no important defections. The President of the Royal Academy does not often contribute, and this year admirers of Mr. Alma Tadema must content themselves here with works by his wife and his daughter. Mr. Whistler has found a home of his own at the "British Artists," but most of those who have made the reputation of the Gallery are faithful to Sir Coutts Lindsay, to whom newer men also are not wanting. Portraiture and landscape are undoubtedly the strong points of English art at the present time, but it is on ideal work that the Grosvenor Gallery especially relies. This year Mr. Watts sends a "Judgment of Paris," a vision of the three goddesses bathed in a glory of light, which he has never surpassed. Perseus shows to Andromeda the reflection of the head of Medusa in Mr. Burne Jones's chief picture, the

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other being a landscape with three figures—the garden of Pan. Both are mediævally conceived and treated, but in landscape this is surely a retrogression, while the mystical truth of the old Greek legend is finely presented, with delicate colour and consummate drawing. Mr. W. Richmond's Fiammetta is a beautiful ideal study of a girl, much influenced by Leonardo and the Lombard School. Mr. Hacker, however, has produced the picture which will probably draw most attention, as the striking work of a rising artist—"Philammon watching Pelagia asleep in the Desert," from C. Kingsley's "Hypatia," a book which furnished Mr. Mitchell with the subject for a painting which made a sensation here two years ago. The large work by the last-named painter in the east gallery, of the "Resurrection of a Saint at the Crucifixion," shows a great falling off, except in the fine figure of the mother. In landscape the exhibition is not very strong, but we must mention the "Loch Awe" of Mr. Keeley Halswelle, the works of Mr. Alfred Parsons and Mr. J. W. North, the sea of Mr. Henry Moore, and the sea *genre* pieces of Messrs. Bartlett and Napier Henry. But in portraits there is full compensation. Mr. Frank Holl sends three, notably one of Lord Harlech; Mr. Herkomer also three, of which that of the late Professor Fawcett is the best; Sir John Millais two, one of his daughter, the other of Lord Esher, Master of the Rolls, in his robes, the latter being especially warm and harmonious. Mr. Burne Jones's finest work is the portrait of a lady in blue, seated with her back to a convex mirror, in which the influence of the late D. G. Rossetti is very strong; the subdued power and beautiful execution of this picture will appeal to many to whom the painter's allegories are unintelligible. Mr. W. B. Richmond contributes four portraits of both sexes and various ages, in his refined eclectic style and rich colour. Of less known artists, we would draw attention to Mr. W. Carter's picture of Mrs. C. A. Fyffe.

WATER COLOURS.

The Royal Institute of Painters in Water Colours has filled its rooms with pictures to the ceiling, but has not made a very interesting exhibition in consequence. Several leading members send no contributions, but the best work belongs, nevertheless, to old members, who do not depart from their established lines. There is plenty of work of a high quality, though nothing of exceptional originality or importance. The third room is perhaps rendered the most striking by Mr. Langley's "Betrayed," and "The Miser's Death," by Mr. Joseph Nash.

THE ART JOKE.

Mr. Harry Furniss, the versatile and amusing artist so well known in the pages of *Punch*, has opened a "Royal Academy" of his own at the Gainsborough Gallery, 25, Old Bond-street. This consists of a room full of large monochrome drawings, burlesquing the mannerisms of the leading artists and the artistic fashions of the day, not without some cuts at the Academy itself, and popularity-hunting and "pot-boiling." We have no space to mention more than the severely close rendering of "Cinderella," and the humour of the "Modern Lady Godiva," which disposes of the question of the prude and the nude. Altogether the exhibition must delight everyone who knows the originals, and can do no harm even to its victims.

SANITARY REGISTRATION OF BUILDINGS.—On the 2nd inst. the second meeting of the Conference convened by the Council of the Sanitary Assurance Association was held for the purpose of considering the details of the Sanitary Registration of Buildings Bill (down for second reading on the 22nd prox.), the principle having been assented to at the first sitting. Sir Joseph Fayrer, M.D., presided. The bodies represented, besides the Sanitary Assurance Association, were the Royal Institute of British Architects, Public Health Medical Society, London Sanitary Protection Association of Municipal and Sanitary Engineers and Surveyors, and Royal Institute of Architects of Ireland. The exclusion of places of less than 2000 population from the Bill was amended by the insertion of a declaration that the Act should next year apply throughout the United Kingdom. A proposal to make the measure compulsory on all buildings was rejected. The further consideration of the matter was deferred for a fortnight.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Kendal Urban District.—Mr. Charles E. Paget records the death-rate of this borough during 1886 as 16·5 per 1000—namely, 2·4 less than the mean for the quinquennium 1881-85, and it is held that this satisfactory result has been greatly brought about by the influence of the borough sanitorium in controlling the spread of infectious diseases. In 1884 the authority saw the advisability of erecting a second ward-pavilion, and on two occasions during the present year the coexistence of two separate diseases needing hospital isolation has shown the wisdom of this course. Interesting details are given as to several branches of the sanitary work carried out; and it is noted that the defective sewer ventilation which, associated with a curious combination of meteorological circumstances, led to an outbreak of enteric fever in the early part of 1884, has been largely remedied, some sixty to seventy new ventilators having been put in. But Mr. Paget gives cautionary advice as to the need for constant watchfulness for evidences of such over-pressure of sewer air as calls for legitimate relief through ventilators in all extensions of borough sewers.

Hanley Urban District.—The mortality of infants under one year of age has for the past four years averaged some 19·9 per cent. of the births registered. In 1886 it was at that rate, whereas the corresponding rate for the twenty-eight large English towns did not exceed 16·9 per cent. Neglect of infants by exposing them to cold, improper feeding, and the use of narcotics and other deleterious drugs are, in the opinion of Dr. S. Walker, responsible for this needless waste of infant life—a waste which is unfortunately on the increase. In some towns Ladies' Associations have—as, for example, by the aid of the tracts issued by the National Health Society—succeeded in educating their fellow towns-women as to the proper precautions to be taken with infants, and some such work would not be out of place in Hanley. In regard of phthisis, it is most satisfactory to note how steadily the death-rate from this disease has become reduced since the completion of the sewerage system, until it stands at 1·4 per 1000, as opposed to 2·0 in London. The report, which deals mainly with statistics and actual causes of disease, does not point out the sanitary advice given, or the work needed in the future, or the circumstances under which the people are living, and which tend to affect health. But the inspector of nuisances supplies a table of current nuisances dealt with.

Newcastle-upon-Tyne Urban District.—Mr. Henry Armstrong's annual report for 1886 shows that the general mortality was at the rate of 22·2 per 1000. Under the Improvement Act of 1882, 1348 cases of infectious diseases were notified, and of these 1004 were scarlet fever, 205 enteric fever, and 73 diphtheria; the report sets forth in detail the circumstances under which the diseases occurred and the remedial measures adopted. Amongst the latter we find that in 108 cases removal to either the fever or the small-pox hospitals was effected, and in 19 cases orders of justices were obtained as to burial of corpses. The construction of new dwellings during 1886 has made provision for 1158 families, at the rate of 5 persons to a family; and plans for 837 new dwellings, of which 638 consisted of flats, were examined by the medical officer of health. Amongst the details of sanitary work carried out, we find that the bakehouses, dairies, cowsheds, milk-shops, and slaughter-houses have been inspected, and that the licensing of the latter is not granted except after such works as tend to ensure wholesome conditions for the storage of human food.

Aylesbury Rural District.—Dr. Hilliard takes occasion in his annual report for 1886 to point out how, on several occasions, early information as to occurrences of measles and scarlatina has enabled him to prevent the spread of those diseases. In some parts of the district the continuance of defective sanitary conditions shows itself by outbreaks of preventable disease. Thus, in the village of Westcott, which is of all others worst off for water, there were twelve fatal cases of diarrhœa; and at Aston Clinton, where faults of water still prevail, typhoid fever continues

to recur. The death-rate for the district was 18·6 per 1000. A good deal of current sanitary work is carried out, the notices relating to such work numbering many hundreds under several separate headings.

Tunbridge Wells Urban District.—During 1882-86 the mean death-rate for this district was only 15·1 per 1000 per annum, and in 1886 it was 14·4. The only noticeable mortality was that of nine infants from diarrhœal affections, and Mr. Wm. Stamford is induced to attribute this mainly to fermentative or putrefactive changes in the milk with which infants are fed. Some scarlatina was checked by the use of the infectious hospital provided by the sanitary authority; and amongst a good record of sanitary work carried out during the year we note that the water-service was laid on to 142 houses.

Eccleshill Urban District.—Measles has been very prevalent in this district, and this, together with some diphtheria and diarrhœa, raised the death-rate for 1886 to 17 per 1000. Measles was found to be difficult of control, especially on account of many of the attacks being so mild that no medical attendance was sought. Hence Dr. Byles only heard of the cases when serious complications supervened.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In twenty-eight of the largest English towns 5816 births and 3647 deaths were registered during the week ending April 30th. The annual rate of mortality in these towns, which had been 20·5, 20·9, and 21·6 per 1000 in the preceding three weeks, declined again last week to 20·6. During the first four weeks of the current quarter the death-rate in these towns averaged 20·9 per 1000, and was 2·5 below the mean rate in the corresponding periods of the ten years 1877-86. The lowest rates in these towns last week were 10·5 in Derby, 14·6 in Brighton, 15·7 in Leicester, 16·3 in Portsmouth, and 16·3 in Bradford. The rates in the other towns ranged upwards to 28·2 in Bristol, 30·8 in Blackburn, 31·3 in Huddersfield, and 35·4 in Cardiff. The deaths referred to the principal zymotic diseases in the twenty-eight towns, which had steadily increased in the eleven preceding weeks from 340 to 558, declined again last week to 529; they included 261 from measles, 132 from whooping-cough, 51 from scarlet fever, 43 from diarrhœa, 25 from diphtheria, 15 from "fever" (principally enteric), and only 2 from small-pox. No death from any of these zymotic diseases was registered during the week in Preston, whereas they caused the highest death-rates in Sheffield, Norwich, and Oldham. The greatest mortality from measles occurred in Manchester, Sheffield, Sunderland, Liverpool, Salford, Oldham, and Norwich; from whooping-cough in Newcastle-upon-Tyne, Cardiff, and Blackburn; and from scarlet fever in Blackburn, Sheffield, and Oldham. The 25 deaths from diphtheria in the twenty-eight towns included 16 in London and 5 in Liverpool. Small-pox caused 1 death in Sheffield and 1 in Cardiff, but not one in Greater London or in any of the twenty-five other large provincial towns. Only 6 cases of small-pox were under treatment on Saturday last in the metropolitan hospitals receiving cases of this disease; no new case was admitted to these hospitals during the week. The deaths referred to diseases of the respiratory organs in London, which had declined in the preceding five weeks, from 509 to 337, were last week 338, and 49 below the corrected average. The causes of 75, or 2·1 per cent., of the deaths in the twenty-eight towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Nottingham, Portsmouth, and in four other smaller towns. The largest proportions of uncertified deaths were registered in Sunderland, Leicester, Preston, and Bradford.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 23·7 and 22·0 per 1000 in the preceding two weeks, rose again to 22·5 in the week ending April 30th; this rate exceeded by 1·9 the mean rate in the same week in the twenty-eight large English towns. The rates in the Scotch towns last week ranged from 9·7 and 15·1 in Perth and Leith, to 24·8 in Glasgow and 26·5 in Paisley. The 563 deaths in the eight towns last week showed an increase of 13 upon the number in the previous week, and included 36 which were referred to whooping-cough, 27 to measles, 8 to scarlet fever, 8 to diarrhœa, 6 to diphtheria, 4 to "fever" (typhus, enteric, or simple), and not one to small-pox; in all, 89 deaths resulted from these principal zymotic diseases, against 91 and 95 in the preceding two weeks. These 89 deaths were equal to an annual rate of 3·6 per 1000, which exceeded by 0·6 the mean rate from the same diseases in the twenty-eight English towns. The fatal cases of whooping-cough, which had been 36 in each of the previous two weeks, were again 36 last week, of which 16 occurred in Glasgow, 7 in Edinburgh, and 6 in Dundee. The 28 deaths from measles were within 3 of the number in the previous week, and included 13 in Aberdeen, 12 in Glasgow, and 2 in Greenock. The 8 fatal cases of scarlet fever showed a further slight decline from recent weekly numbers; 4 occurred in Edinburgh and 2 in Greenock. Of the 8 deaths attributed to diarrhœa, 3 were returned in Dundee and 2 in Edinburgh. Four of the 6 fatal cases of diphtheria, and 2 of the 4 from "fever," occurred in Glasgow. The deaths referred to acute diseases of the respiratory organs in the eight towns, which had been 126 and 124 in the preceding two weeks, further declined last week to 111, and were 12 below the number in the corresponding week of last year. The causes of 70, or more than 12 per cent., of the deaths registered in the eight towns during the week were not certified.

HEALTH OF DUBLIN.

The rate of mortality in Dublin, which had been 30·0 34·1, and 31·3 per 1000 in the preceding three weeks, was again 31·3 in the week ending April 30th. During the first four weeks of the current quarter the death-rate in the city averaged 32·2 per 1000, the mean rate during the same period being but 18·6 in London and 19·5 in Edinburgh. The 212 deaths in Dublin last week corresponded with the number returned in the preceding week; they included 11 which were referred to measles, 4 to whooping-cough, 3 to "fever" (typhus, enteric, or simple), 3 to diarrhœa, 2 to diphtheria, 1 to scarlet fever, and not one to small-pox. Thus 24 deaths resulted from these principal zymotic diseases, against 22 and 19 in the preceding two weeks; they were equal to an annual rate of 3·5 per 1000, the rates from the same diseases being 2·6 both in London and in Edinburgh. The 11 fatal cases of measles showed a further considerable increase upon recent weekly numbers, while the deaths from the other zymotic diseases did not show any material variations. The deaths both of infants and of elderly persons showed an increase upon those returned in the previous week, while those of persons aged between one and sixty years had declined. Five inquest cases and 5 deaths from violence were registered; and 50, or more than a quarter, of the deaths occurred in public institutions. The causes of 34, or more than 16 per cent., of the deaths registered during the week were not certified.

THE SERVICES.

WAR OFFICE.—Army Medical Staff: Surgeon-Major William James Wilson, M.D., to be Brigade Surgeon, vice William Cherry, granted retired pay (dated March 28th, 1887); Surgeon-Major John Croker is granted retired pay (dated April 30th, 1887).

INDIA OFFICE.—The Queen has approved of the retirement from the Service of the following Officers of the Indian Military Forces:—Brigade Surgeon Henry Cayley, of the Bengal Medical Establishment (dated April 29th, 1887); Brigade Surgeon Cameron Joseph Francis MacDowall, of the Bombay Medical Establishment (dated April 1st, 1887); Brigade Surgeon Henri Jules Blanc, M.D., of the Bombay Medical Establishment (dated April 2nd, 1887); Surgeon-Major Warwick Jackson, of the Bengal Medical Establishment (dated April 8th, 1887); and Surgeon-Major Robert Reid, of the Bengal Medical Establishment (dated April 25th, 1887).

The under-mentioned Officers have been granted a step of honorary rank on retirement:—Brigade Surgeon Cameron Joseph Francis MacDowall, of the Bombay Medical Establishment (dated April 1st, 1887), and Brigade Surgeon Henri Jules Blanc, M.D., of the Bombay Medical Establishment (dated April 2nd, 1887), to be Deputy Surgeons-General.

ADMIRALTY.—The following appointments have been made:—Fleet Surgeon Fleetwood Buckle, to the *Unicorn*;

Surgeon Hamilton E. L. Earle, to the *Duncan*, additional, for disposal; Surgeon George A. Dreaper, to the *Triton*, additional; and Surgeon Henry B. Beatty, to the *Duncan*, additional.

ARTILLERY VOLUNTEERS.—3rd Durham: Jas. Drummond, M.D., to be Acting Surgeon (dated May 4th, 1887).—1st Kent: William Lindsay Chubb, Gent., to be Acting Surgeon (dated May 4th, 1887).—1st Newcastle-on-Tyne: Surgeon R. Young, M.D., resigns his commission (dated May 4th, 1887).

RIFLE VOLUNTEERS.—2nd Ayrshire: Surgeon and Honorary Surgeon-Major R. Dobbie, M.D., resigns his commission; also is permitted to retain his rank, and to continue to wear the uniform of the corps on his retirement (dated May 4th, 1887).

THE VOLUNTEER MEDICAL STAFF CORPS.—The Maidstone Division: Surgeon and Honorary Surgeon-Major David Henry Monckton, from the 2nd Volunteer Battalion, the Prince of Wales's (North Staffordshire Regiment), to be Surgeon (dated May 4th, 1887).

Correspondence.

"Audi alteram partem."

THE PENGE CASE.

To the Editors of THE LANCET.

SIRS,—Many of your readers will recollect that about eleven years ago four persons were found guilty of murdering Harriett Staunton by starving her, and were condemned to death; but that to a large proportion of the public, and to a larger proportion of the medical profession, the evidence that was adduced did not seem to justify the verdict of the jury or the sentence of the judge; and that subsequently the prisoners' punishment was commuted to penal servitude for life, a result which was largely due to the action of THE LANCET, through whose agency a petition signed by over 700 members of the profession was presented to the Home Secretary. Shortly afterwards one of the female prisoners had a free pardon accorded to her; some five or six years ago one of the brothers Staunton died in prison of consumption; and about three years ago Sir W. Harcourt set at liberty the wife of the deceased brother. One only of the party still remains a prisoner. For my own part, I believe the accused were innocent of intentional wrong. But even granting what many of those who helped to save them from death believed that they had been guilty of gross, and even criminal, negligence, eleven years of penal servitude is a heavy and surely sufficient penalty to exact. Considering, however, that two have already been pardoned, it is certainly hard that the same grace should after so many years of punishment be withheld from the last of the number. Will you allow me to mention that a petition to the Home Secretary praying for the release of Louis Staunton is now in process of signature, and to invite some of those who signed the former memorial to attach their names to this?

I am, Sirs, yours faithfully,

Old Burlington-street W., May 4th, 1887. J. S. BRISTOWE.

THE TREATMENT OF EPISTAXIS BY COUNTER-IRRITATION OVER THE HEPATIC REGION.

To the Editors of THE LANCET.

SIRS,—I was much pleased to observe in a letter from your Paris correspondent, dated April 27th, that at a recent meeting of the Academy of Medicine M. Verneuil read a communication upon the treatment of certain forms of epistaxis by counter-irritation over the region of the liver. In the first case related by M. Verneuil, quinine, ergotine, and digitalis had all been tried in vain. In the second, plugging had failed. The third had been the subject of chronic nephritis, with secondary affections of the heart and liver, and the cavity of the nose had been plugged without effect both with ergotine and the perchloride of iron. M. Verneuil's treatment, which was immediately and permanently effective, consisted in the application over the region of the liver of a large blister. M. Verneuil had at first thought that the method was entirely his own, but from bibliographical research it turned out that it had been anticipated to a certain extent by Galen, who says that large cupping glasses applied to the hypochondriac region arrest nasal hæmorrhage. To me it is very satisfactory to learn that a mode of treatment practised by myself successfully for many years, and reported in THE LANCET of Oct. 30th, 1886, with cases in illustration, has also been advocated by so eminent an authority in continental medicine, and, as far as he was concerned, independently of any suggestion from another. I am quite sure that, in his case any more than my own, the dictum of Galen had nothing to do with its origination. It is of more importance that the remedy, which is undoubtedly of the utmost value, should be more generally adopted, especially when its application is urged not upon merely empirical grounds, but in accordance with accepted pathological teaching. That your correspondent did not appear to be aware of my previous pronouncement on the subject arose possibly from the fact that my publication did not take the form of a monograph with specific heading, but as portion of a paper treating of congestion of the liver, and protesting against the impolitic interference of modern surgery with the sanitary efforts of Nature when through the medium of hæmorrhage from the hæmorrhoidal veins or the mucous lining of the nostrils she endeavours to lessen the turgescence of an important viscus. In illustration of my views, I gave the particulars of a case of vicarious bleeding from the under lip, which arose immediately after the deligation of hæmorrhoidal tumours with excessive bleeding, ultimately cured by blistering over the liver; of a second example, in which dangerous and profuse hæmorrhage from piles was immediately cured by a similar remedy; and then, in pursuance of my theme, appended the cases of three young men suffering from epistaxis, who were instantly relieved by blistering over the hepatic region. A remarkable case, which occurred during the recent riots in Belfast will further illustrate the subject: While paying my morning visit to a straw lodge, a temporary barracks improvised for the members of the Royal Irish Constabulary, and accompanied by one of the officers, I found one of the men in bed with a handkerchief saturated with blood, which had flowed from his nose during the greater part of the previous night. On satisfying myself of the nature of the illness, I painted the man freely with the liquor epispasticus over the region of the liver, prescribing no other remedy but rest in bed. On our revisiting the man next day, he informed us that from the moment the blister began to pain him the hæmorrhage declined, and left him altogether a short time after. To quote from my paper: "The frequent occurrence of epistaxis in youth is evidently due to the excitement and hyperæmic condition of the liver and digestive organs during the period of active growth and the constant demands upon its functional activity. The liver at this stage closely approximates to the condition in after-life, which is the causal factor in the development of piles, and as such is equally amenable to treatment in accordance with etiological principles; the derivative that cures the hæmorrhoidal flux as certainly puts an end to the epistaxis, the outcome of hepatic congestion."—I am, Sirs, yours very truly,

Belfast, May, 1887. ALEXANDER HARKIN, M.D., F.R.C.S.

ON THE NECESSITY OF OBTAINING POWERS TO DETAIN IN WORKHOUSES AND INFIRMARIES PATIENTS AFFECTED WITH VENEREAL DISEASES.

To the Editors of THE LANCET.

SIRS,—A few years ago our Government, swayed by the twaddle of sentimental politicians and by a misguided and ill-informed public, had the rashness to repeal the Contagious Diseases Act, and thus has engendered the spread of venereal diseases not only amongst our sailors and soldiers, but throughout the community. I now wish to call attention to the pressing necessity of acquiring powers to detain patients suffering from these diseases in our Poor-law and other institutions until well. In some of our workhouses and infirmaries patients are found suffering from the most fearful ravages of syphilis and from the most virulent forms of gonorrhœa, and many of them insist on taking their discharge before they are cured. Now, for such patients to have it in their power to leave the infirmary or workhouse before recovery is not only most unsatisfactory as regards the treatment of them, but is simply

spreading disease broadcast, and is likewise a grave injustice to the ratepayers, upon whom is thrown the cost of their maintenance when ill. It is not my intention to discuss the merits of the Contagious Diseases Act, but I will say that its repeal, in addition to facilitating the spread of venereal diseases, has a tendency to encourage seduction and prostitution amongst a large class of girls and young women who support themselves in an honest and respectable way. It appears to me to be the duty of medical men who are members of Parliament, or otherwise possess considerable influence, to try to introduce another Contagious Diseases Bill, or, failing that, some measure giving powers for the detention of these cases in our Poor-law institutions until they can be discharged cured.

I am, Sirs, yours faithfully,

April, 1887. ARTHUR FFLINTOFF MICKLE, M.B.

TANGIER AS A HEALTH-RESORT.

(From a Correspondent.)

As a winter station and a pleasure resort Tangier is rapidly acquiring considerable popularity. Many circumstances combine to bring about this favourable result. Politically, the range of modern artillery has rendered Tangier a military position second only to the Suez Canal. Without attempting to discuss here all the complications that arise from the necessity of keeping open the Straits of Gibraltar and the efforts of English diplomacy to prevent any powerful nation becoming master in Morocco, it is nevertheless necessary to mention the existence of these grave political questions in order to account for the importance now attached to all that concerns the town of Tangier. Already the Sultan of Morocco has been termed "the new sick man," and it is evident to all politicians that the Eastern question is travelling westwards, and may have to be fought out in the Straits of Gibraltar as well as at the Dardanelles or the Red Sea. Conjointly with these considerations, the development of trade at Tangier has been most marked. The increase of exports and imports in 1885 was nearly equal to a third more than the average of the previous five years. Thus, either politically or commercially, Morocco is daily becoming better known. Though within three hours' sail of the high degree of civilisation prevailing at Gibraltar, Tangier still maintains primitive Oriental customs and appearance. To those who thirst for a complete change, who are tired of the ordinary resorts of the invalid or the tourist, Morocco may be confidently recommended. The need of such change is very generally recognised, especially when dealing with those nervous diseases that are more prevalent as the strain of our highly wrought civilisation becomes greater. But the health stations of the Continent grow more and more like each other; there is a wearisome sameness about the hotels, the society, and surroundings, which many would like to avoid. On the other hand, a thorough change is generally thought to involve a long journey, a sojourn in a country far removed from the resources of civilisation, where some personal risks must be incurred. Tangier, however, can be reached from London in five or six days by the Forward line of steamers, and from Marseilles in three days and a half by the Pacquet line. The overland journey to Cadiz, Malaga, or Gibraltar brings the traveller within a few hours' sail of Tangier; and, when once here, he can benefit by the wildest scenery, the most complete change, while enjoying perfect personal security. In spite of the barbarous aspect of the country, the European is safer from robbery and aggression than in the streets of London or Paris. The dread of the Moorish authorities lest any complaint made by a European should lead to an invasion of their country has brought about the application of the severest and the most cruel measures of repression. Quite recently a man was flogged to death because he was supposed to have robbed a foreigner. Others are left to die of starvation in prison when they are accused of owing money to persons under foreign protection. Whole districts have been most cruelly oppressed, taxed, and half ruined to supply compensation for some slight robbery committed in the neighbourhood. Yet all this, heinous as it is, has, on the other hand, the result of terrifying those who otherwise might be guilty of acts likely to alarm intending visitors. Thus it is possible to live without fear or risk in a country of easy access from England, and yet where there are no regular roads, no carriages, no railways, no police, no inland post, no municipalities, no rates or taxes for Europeans to pay, no standing army or drilled troops, no daily newspaper, no public opinion, where, under the capitulations, there are thirteen Christian and one Mahomedan constitutions having the force of law, and where, in spite of all this, a sufficient amount of material comfort may be enjoyed conjointly with the benefits of a most genial climate. If it is change of life, scenery, and climate that have been prescribed for the patient, it would be impossible to find nearer home anything more thorough in this respect than Tangier. Even if there were nothing else to say in its favour, this is enough in itself to show that it may render much service.

From time immemorial, however, Tangier has been renowned for its equable and salubrious climate. It was much esteemed by the ancient Romans, who built here a commercial town on the east and a military fortress on the west side of the bay. Long before their time, before Rome itself sprang into life, the exceptional position occupied by Tangier had attracted various races and tribes, and it is said that there are only two other towns in the world whose existence can be traced so far back. A glance at the map will show that Tangier is situated on a promontory running northward from the mainland of the African continent. It is nearer to the Atlantic than to the Mediterranean. The north-west, west, and south-west winds are all Atlantic winds. The north-east blows down the straits from the Mediterranean, and the east and south-east also blow from the Mediterranean over the Reef Mountains and across the Bay of Tangier. Thus nearly all the winds that reach Tangier are sea winds, and therefore supply an atmosphere of exceptional purity. Even the north wind, which comes direct from Spain, is refreshed and purified by crossing the Straits of Gibraltar. The due south is alone a land wind, and, coming from the desert, might be extremely unpleasant. Fortunately, this wind must first pass over the eternal snow of the Atlas Mountains before it can reach Tangier. Thus even in summer the climate is comparatively cool, while in winter it is exceptionally warm. The better-known winter stations on the French or Italian Riviera receive as many land as sea winds. Those winds that do come over the water blow from the Mediterranean, and this sea does not seem to agree with English constitutions so well as the Atlantic. Again, comparing Tangier with the Riviera, it will generally be admitted that there is not the same and dangerous difference between night and day temperature. At sunset the thermometer falls much more than in England, but less than on the Riviera. Frosts are extremely rare. This winter, which has been so exceptionally cold throughout the west of Europe, brought only a few flakes of snow, that melted as soon as they touched the ground. On the other hand, Tangier is not so dry as the Riviera resorts. While the record of the thermometer is most favourable, the individual may nevertheless feel chilly because of the dampness that arises at night. Extra clothing, and perhaps a little fire in the evening during the depth of the winter, amply suffice to cope with this disadvantage; but it is essential to take this local peculiarity into account, or the patient will be unpleasantly surprised to find that his personal sensations do not harmonise with the temperature marked on his thermometer. Unfortunately, there is no regular meteorological station at Tangier. Observations have been taken here and there; the best are those of the German Legation, but these statistics are not compiled, and the summary of the results have not been made public. Dr. Arthur Leared, in his interesting work on "Morocco and the Moors," gives statistics taken in a *patio* or courtyard, showing that during the year 1872 the maximum (reached in June) did not exceed 83° F., and the minimum (attained in December) was not lower than 50° F. During the six winter months the thermometer ranged from 66° F. to 50° F. But these statistics are not sufficiently extensive to warrant the formation of any definite opinion.

Perhaps, under these circumstances, it would be safer to rely on the vegetation as the surest evidence of climatic advantages. There are, it is true, comparatively few gardens at Tangier; but if the necessary money were forthcoming almost any plant could be grown here. The tropical and semi-tropical plants to be seen on the Riviera may also be found in the neighbourhood of this town; but many of these have grown with more vigour and attained larger dimensions. This is especially the case with respect to the Egyptian and Mexican bamboos in the garden of the Belgian

Legation and the *Dracæna drago* at the German Legation. This latter tree is one of the curiosities of Tangier. It is probably more than 300 years old, and is considered the finest specimen in the world. At the Canary Islands there is one tree of this sort which is larger, but it is not so high or so handsome. Close at hand the *Datura* shrub, which is killed by 2° to 3° F. of frost, may be seen growing to a height of more than twelve feet. Wild oleanders abound in great luxuriance throughout the country. The *Belas ombré*, with its giant roots, and the *Chamærops humilis*, the date palm, grow naturally—that is, in a wild state and without cultivation. The cedars of Lebanon, the *Laurus*, both *tenus* and *nobilis*, the banana, the *Strecia*, the *Magnolia grandiflora*, and many other plants that are only known in the hot-houses of England, prosper here in the open air, even when little care is taken to preserve them. But perhaps the best illustration of the equable nature of the climate is that of the *Araucariæ excelsa;* for, while this fir can stand but little heat, it is killed at once by the frost. If the heat continued for a few days consecutively at 75° F. the leaves would turn yellow; and it is extremely difficult to find any place where this tree will grow. Yet at Tangier several specimens have been successfully reared, notably under the able surveillance of a German horticulturist, Herr Ferdinand Neureuter, who is in charge of the gardens belonging to Mr. Perdicaris.

The salubrious character of the climate is further demonstrated by the observations of medical men who have practised for some time in this country. Dr. Miguères, who has resided at Tangier some sixteen years, acting in the capacity of consulting physician to the French Embassy and to the French Hospital, and who has had a most extensive practice among the native and foreign population, declares that many diseases which in other countries last from fifteen to twenty-one days reach the convalescent state at Tangier in from ten to twelve days. This is, of course, more particularly the case with the natives or those foreigners who are thoroughly acclimatised. Among the diseases that rarely attain a malignant form may be mentioned typhoid and scarlet fever, measles, and diphtheria. Though in England there is such good reason to dread any outbreak of scarlet fever, its occurrence here is very rare, and of remarkably mild character. A fever, however, which in many respects bears a close resemblance to typhoid is of somewhat frequent occurrence. Infantile diarrhœa is also very prevalent, and one of the principal causes of mortality. It is doubtful whether the climate would be of any use in the more advanced stages of phthisis. But the results attained during the earlier development of the disease are most encouraging. These facts are confirmed by the records kept at the hospital and by the local practitioners.

In spite of this favourable record, it must be acknowledged, however, that the sanitary state of Tangier is most deplorable. Nevertheless, the Moors are, in one respect, more advanced than the French and the municipalities of many Spanish and Italian towns. They, at least, admit direct drainage into sewers, and believe in the practibility of small sewers. At Tangier there are two main sewers, both sufficiently large for a man to enter. The principal sewer passes through the ravine—that is, the lowest portion of the town—and empties itself under the small landing stage in the bay. It is about a yard wide and a yard and a half high; the roof is domed, and the invert but slightly concave. This sewer runs a distance of a thousand yards, and during heavy rains is often completely filled. It is said to have been originally built by the Romans, but was probably in part rebuilt during the English or the Portuguese occupation. The other main sewer crosses the town more to the east, at a somewhat higher level, and passes under the British Legation. From all the neighbouring small streets, innumerable small sewers converge to these two main drains. These little sewers are very badly constructed of rough masonry and tiles. They are often stopped up, and burst. They invariably leak, and contaminate the surrounding soil. They are not deep enough in the earth, and fall into the top instead of the lower portion of the main sewer. Thus they convey back to the houses the gases accumulated in the main as well as in the branch drains. Nor have the Moors any idea of making traps, or of ventilating or systematically flushing the sewers. On the other hand, their closets are, as a rule, well situated, just by the side of the entrance door, and behind the wall facing the street. The drainage, therefore, has not to pass under and through the house. Less than three feet of piping suffices to carry it into the street. Also all the water used in Tangier goes into the house drain, and is not, as in France, wasted by being thrown into the gutter. All the water used helps to flush both the house drain and the public sewer. The Moors, to their credit be it said, use a great deal of water. If they could only be induced to trap their closets, the drainage of Tangier might compare favourably with many continental towns, and would be preferable to Marseilles or Toulon. Some of the worst houses in Tangier are those built for Europeans, especially for the Spaniards. The closets in these have been carried further within the houses, and yet are not trapped. Other drains are opened in the *patio* or the kitchen; thus the sewer poisoning is more complete, and more thoroughly distributed over the entire house.

Anyone, however, who settles in this country may to a great extent protect himself efficaciously against the surrounding bad sanitation. He will not be harassed by police regulations that are opposed to the laws of hygiene. In France, for instance, there is a police ordinance to the effect that soil pipes must measure nine inches in diameter, though experience has proved that the size should not exceed three or four inches if the pipe is to be self-cleansing. Then a cesspool or a *tinette* is imposed, and, as often as not, the cesspool is built immediately under the house, so that anything like effective interception is impossible. At Tangier the whole of the drainage is sent to the sewer. There is an English plumber in the town, with all the necessary sanitary appliances, and for a small cost the house drains may be trapped and ventilated according to the most approved system. If the interior of the houses is in a bad condition, this is entirely the fault of the owners or occupiers. Thus half the difficulty can be overcome. Nor would it be impossible to obtain permission from the Sultan to substitute sound earthenware pipes, properly laid, for the miserable little tile-built drains, which so often burst and poison the atmosphere of the by-streets. Unfortunately the Diplomatic Corps are not a body of sanitary reformers, nor does it seem possible for them to act in unison with respect to any reform whatsoever. The Moorish authorities, on the other hand, will not move except under pressure, and united pressure, from without. Anything like precaution or forethought is opposed to Moorish customs and beliefs. It is quite useless expostulating on the danger of epidemics. If such a scourge arrives, it is the will of Allah, and it is neither right nor possible to attempt any resistance. But even if the sewers of Tangier cannot be rebuilt, the town is small, and it is easy to find villa accommodation beyond its walls. So far as the hotels are concerned, the proprietor of the Continental Hotel, for instance, has not only installed good English closets, but has caused the whole of the sewer passing along the street in front of his premises to be rebuilt. Thus, if the Moorish authorities will not act themselves, they do not oppose others taking the matter in hand. Villas outside the town must of course drain into cesspools, as the sewers do not go beyond the city walls. But land is still cheap, the villas are generally surrounded by good-sized gardens, so that the cesspools may be, and generally are, built at some distance from the dwelling. All the ordinary methods of trapping, ventilation, and interception can therefore be applied, and every precaution taken against the ingress of sewer gas. There are beautiful sites within a few hundred yards of the town where clusters of villas and hotels could be built on the best sanitary principles. No Government interference would prevent the creation of a small Hygiea, where perfect sanitation would unite with an almost perfect climate to constitute an ideal health-resort.

In the meanwhile, the town remains in a very dirty and, to some extent, dangerous condition. While there is free access of sewer gas into the interior of the houses, the streets outside are in a filthy state for want of proper scavenging. The water-supply, at one time exceptionally good, is becoming more and more exposed to contamination. To the east of the town, the district known as the Ras-el-Ma (the head of water) is composed of a layer of sand some seven to ten yards deep. Beneath the sand will be found a very broad stratum of shistose clay. The rain-water filters through the sand, is checked in its downward course by the clay, and then flows by gravitation to the sea. On this plateau, which is sixty-four metres above the sea, the Romans built a great number of small drains, covered over with tiles placed a little apart from each other, so that the water might run in between them. These small drains all fed a large aqueduct which passes through the town down

to the Marina after travelling a distance of 1400 metres. This large canal or collector must have been most admirably built to have resisted so many centuries of ill-usage. On reaching the town there are two derivatives from the main aqueduct; one goes to the Sultan's mills, the other to the Fuente Nueva; but both these are now stopped up, and there only remains in working order the principal canal, which, passing under the large *soko* (or market) down the main street, supplies the fountains of this street and the Mosque at the further end. In its course through the town, the water may be contaminated by the leaking sewers that pass under it, over it, and by its side. Also the land at Ras-el-Ma, formerly uninhabited, is now dotted over by villas and a cluster of huts occupied by natives. Not only do these people to some extent contaminate the soil, but the land which is not built upon is being brought under cultivation—that is to say, covered with manure. It is true that a sample of the water taken and analysed in 1882 still proved exceptionally pure, and was compared for its excellence with the water brought to Seville by the English company; still it is evident that, as the population increases on this spot, the quality of the water gathered from the soil will be impaired. Herr Meis Burger, an Austrian engineer resident at Tangier, with the authority of the Government, investigated the whole condition of the water-supply, and states that half the small drains which bring the water from the soil to the aqueduct are now broken and useless. These he proposes to lay bare and reconstruct, and calculates that the whole work of restoration would only cost £6000. Further, he would constitute a large reservoir containing 10,000 cubic metres of water to be delivered in the town through iron pipes. Thus, in dry seasons a reserve supply could be drawn upon, and the iron pipes would prevent contamination from the proximity of the street sewers. By these means the water-supply could be doubled, and give each inhabitant of Tangier twenty-five litres per day. Instead, however, of relying on the surface supply derived from the sand, it would be preferable, as there are no springs at hand, to dig artesian wells, and then there would be no longer any reason to apprehend that the growth of the town will endanger the purity of the water. At present many persons drink only rain-water obtained from the roofs of their houses. This is stored in large tanks under the houses, which are seldom cleaned with sufficient care, and which occasion a dampness injurious to health. Others, in their ignorance, avail themselves of the numerous wells in and about the town, though the water is often highly charged with organic matter. This is especially the case with respect to some wells at a lower level than the cemeteries to the west. Under these circumstances, it is necessary for all visitors to boil and filter their drinking-water, and to make it a duty to complain as lustily as possible, so that the long promised waterworks may at last be taken in hand; in fact, the European population, by united action, have it in their power to make Tangier one of the most enviable pleasure and health resorts within comparatively easy access.

NORTHERN COUNTIES NOTES.

(From our own Correspondent.)

THE NEWCASTLE JUBILEE EXHIBITION.

On the 11th of this month our exhibition is to be opened by his Royal Highness the Duke of Cambridge, who is to be the guest of our eminent citizen, Sir W. G. Armstrong, at Cragside, Rothbury. The full title of the exhibition is the Newcastle-on-Tyne Royal Mining Engineering and Industrial Exhibition. I give it here, and hope it will not be necessary to repeat it often. The exhibition will include a very great number of objects of general interest, but it will also cover many subjects of medical or sanitary interest, and of these, so far as they are likely to prove welcome to your readers, it will be my duty to write about from time to time in this correspondence. I have (as your representative) received an invitation from the Executive Council to join the private inspection of the exhibition which is to take place on Saturday next, the 7th; but as it is requested that no notice of the exhibition is to appear in any paper until Monday next, the 9th, I must reserve my remarks until then. We are to have another great exhibition here during the coming summer—namely, the Royal Agricultural—at which his Royal Highness the Prince of Wales has promised to be present, so that our northern city is likely to attract a large number of visitors this coming summer.

AN OUTBREAK OF TYPHUS IN NEWCASTLE.

There has been an outbreak of typhus fever in the east end of Newcastle, confined to two or three of the poorer streets, and densely inhabited by not the best class of working people. Already about eighteen cases have been admitted to the Fever Hospital. It is the opinion of our medical officer of health, Mr. H. E. Armstrong, that the disease has been imported into our city by some strangers. I am happy to report that there has been no fresh case since the 25th of last month. While on the subject of fever, I may here allude to the facilities for its study which will be afforded to students at the new and very complete hospital just erected for the city at Heaton. Seeing that the study of fever is not at all attended to by students in England as in Ireland, it is now recommended to be taken up by candidates for the licence in Sanitary Science of the University of Durham and for the M.B.

THE HARDY NORTHMEN.

All this spring, so far, we have experienced a good deal of the dull grey weather which is said by the poet to make "strong Englishmen." This has been accompanied by cold east and north-easterly winds, very trying to all but the very strongest constitutions. Nothing daunted, however, "the bathing season," we are told, set in yesterday, when the Tynemouth Amateur Swimming Club had its first "outing," or first "inning" perhaps I should say, as it is stated that yesterday, after an appropriate speech by the mayor to an assembly of about sixty, "a rush" was made by most of those present into the sea, where they appeared to thoroughly enjoy themselves. Scarcely much behind us on the other side of the Tyne, the swimming folk of Shields took the water to-day, and before doing so they were addressed by the president, the worthy Alderman Nelson, J.P., who stated that he had bathed in the sea 105 times this year already. Comment on this is needless.

SUNDERLAND.

It is very pleasing to hear that the Sunderland Workmen's Exhibition during the month it was open made a profit of about £500. This will be handed over to the funds of the infirmary there, which is free and also well supported by Sunderland artisans.

The vacancy in the staff for an honorary physician at the Newcastle Dispensary is likely to be filled up by the appointment of Dr. Beatley, of this city, who is the selected candidate, and who previously held the office of resident medical officer with much satisfaction.

Newcastle-on-Tyne, May 3rd.

DUBLIN.

(From our own Correspondent.)

ROYAL COLLEGE OF SURGEONS.

THE annual election of office-bearers will take place on the first Monday in June, and canvassing for the Council has already commenced. I have four names before me who seek election at the hands of the Fellows—viz., Messrs. Kendal Franks, Heuston, Norman, and Ward. Mr. Franks made such a satisfactory attempt last year, being defeated by only four votes, that I regard his success on this occasion as assured. This will be Mr. Heuston's first application, and although it is extremely unusual for a gentleman to obtain a seat on the Council on his first candidature, yet I think he will be well supported, and deservedly so. As regards Mr. Norman, who is resident medical superintendent to the Richmond Lunatic Asylum, he will, I am informed, if elected, devote special attention to matters affecting psychical medicine. Mr. A. H. Corley, vice-president, will succeed Sir William Stokes as president, and the office he vacates will be contested by Mr. Henry Fitzgibbon and Mr. H. Gray Croly. Both these gentlemen will be well supported, and the contest, I am convinced, will be a very close one.

THE VICTORIA JUBILEE HOSPITAL.

A committee was appointed last February for the purpose of taking steps to commemorate Her Majesty's Jubilee in a manner which would include the inauguration of some

work of public utility, and which would especially benefit the working classes of the county and city of Dublin. After due consideration, it was decided that the foundation of a hospital for consumption and diseases of the chest would be the most fitting memorial. The committee state that they were aware that persons suffering from consumption and other similar forms of lung disease cannot be treated with a fair prospect of success in town hospitals, and that in many cases it is inadvisable to admit such to the general hospitals of the city. By the establishment of a hospital of the kind proposed adjacent to Dublin, many patients may be successfully treated who at present end their days in the Hospital for Incurables, and many others, not absolutely curable, may be so alleviated as to enable the sufferers to lead comparatively healthy and useful lives. From the mortality returns of Ireland, it appears that over one-tenth of the deaths are caused by consumption, and about one-sixth by other diseases of the lungs; while in the city of Dublin and its immediate suburbs the annual average deaths from consumption number a little over 1000, from other diseases of the respiratory organs over 1800, the two groups forming about one-third of all the deaths which take place in Dublin. It is gratifying to state that the subscriptions towards the proposed hospital have already reached a sum of £6640.

DUBLIN HOSPITALS COMMISSION.

In addition to the remarks made in last week's issue relative to this report, there are a few others to which attention may now be directed. The commissioners, having reviewed the circumstances of each institution, make some suggestions which they consider will render them more effective institutions for the advancement of medical knowledge. They refer to the large number of small hospitals in Dublin, which add largely to the "establishment charges," and by frittering away the number of beds among so many hospitals, thus diminish the opportunities for clinical instruction. They recommend a reduction in the number of general hospitals, and believe that the total income of the various hospitals, taken at an average of £65,000, would suffice to support 1249 beds, the number maintained in 1884–5, if judiciously distributed among a few large institutions; but under the present circumstances the withdrawal of the Parliamentary grant would be attended with disastrous consequences. They suggest that the annual grants be commuted for a capital sum to be invested in the hands of trustees, and that the interest be paid periodically to a central board, to be distributed by them among such hospitals as shall fulfil certain specified conditions. In my opinion, it is extremely unlikely that these recommendations of the commissioners will be carried out; and, indeed, if they were in their entirety, it might prove injurious to some institutions which thoroughly deserve the grants they at present receive.

ACADEMY OF MEDICINE.

By a clerical error it was stated last week that the title of the Academy was intended to be "The Royal Irish Academy of Medicine"; it should have been stated that it was resolved to apply for permission to use the prefix "Royal," so that it shall be called "The Royal Academy of Medicine in Ireland."

THE "KENNEDY DEFENCE FUND."

Allusion has already been made in these columns to the groundless accusations brought against Dr. Kennedy, the resident surgeon of Mercer's Hospital. A committee has been formed, who invite subscriptions from the profession so as to express their determination to support one another when called on to meet charges arising out of the conscientious discharge of their duties, and also to indemnify the member of the profession so charged against law costs.

Dublin, May 3rd.

BELFAST.

(From our own Correspondent.)

THE BELFAST DISTRICT LUNATIC ASYLUM.

In the fifty-seventh annual report of this asylum, just issued, Dr. Merrick, the able and courteous superintendent, states that there have been 196 admissions during the year, which, with those already in the asylum at the end of 1885, makes the total number under treatment 766; 130 have been discharged, and 35 have died, leaving a total of 601 in residence at the end of the year 1886. Of those discharged, seven were unimproved or harmless, forty-two were improved, and eighty-one recovered. One death occurred from suicide. The general sanitary condition of the house has been most satisfactory, and no case of infectious disease occurred. The gross expenditure for the year amounts to £12,837, which gives the cost per head at £21 14*s.* 4¾*d.*, and is a decrease of £1 4*s.* 4½*d.* on comparison with the cost of the preceding year. Considerable changes in the *personnel* of the medical staff have taken place. Dr. Purdon has been appointed visiting and consulting physician, in place of Dr. Henry MacCormac deceased. Dr. W. Graham, assistant to Dr. Merrick, has been appointed medical superintendent of the Armagh Asylum, and Dr. Samuel Graham has been appointed in his place.

THE ROYAL HOSPITAL.

The summer session commenced on Tuesday, and the medical classes have also started at Queen's College. At the Royal Hospital Mr. John Campbell has gained the Coulter Exhibition, while the Malcolm Prize has been awarded to Mr. Quarry. Mr. Campbell has also won the Gold Medal at the Belfast Hospital for Sick Children.

MEETING OF SOCIETIES.

At the last meeting of the Ulster Medical Society, instead of the reading and discussing of papers, the evening was devoted to the exhibition of patients, instruments, and specimens. A large number of members of the Society were present, and among the contributors were Dr. Whitla, Dr. Esler, Dr. Dill, Dr. Sinclair, Dr. M'Caw, Dr. Browne, and Mr. Fagan. At the meeting of the North of Ireland Branch of the British Medical Association, held last week in Belfast, papers were read by Dr. Burden, Dr. Byers, Dr. O'Neill, and cases shown by the last-named gentleman and Dr. Esler.

AUSTRALIAN NOTES.

(From our own Correspondent.)

SANITATION (?) IN BRISBANE.

THIS town is in a very discreditable state, as far as health matters are concerned. There is a Central Board of Health, the members of which are Government nominees, who (with the notable exception of Dr. Taylor, who not long ago furnished the Government with a full report on the relative merits of different sewage systems, and who does all he can to stir the Board up) are content to do little but meet and take their guinea a sitting each. Certainly they have no powers entrusted to carry out any improvement, and have recently failed even in getting the Arcade cesspits removed, which are an acknowledged nuisance to the neighbourhood, and have to be emptied fortnightly by men going down into them and baling the excreta out in buckets. There is no permanent medical officer of health to the corporation, and the water supplied to the town by the Board of Waterworks was so filthy recently that one of the reservoirs had to be shut off on account of the general popular outcry against it.

HORRIBLE ABORTION CASES IN NEW ZEALAND.

Dr. Russell of Christchurch (a coloured American practitioner), who has been in practice in that town for some years, is now on his trial for abortion in three cases. The evidence goes to prove that he has been making a systematic practice of this, and he seems to have kept a sort of abortion hospital at a small boarding-house in the town, where he regularly attended. One woman who had been aborted by him acknowledged to having been twice operated on by him, and that on the former occasion the fœtus was put on the fire alive to destroy it. Another woman gave evidence that she had been aborted twice by him, had had criminal intimacy with him, and that the second pregnancy was by him. Ten pounds seems to have been his customary fee for the business. When arrested he endeavoured to commit suicide by taking tincture of aconite, but a dose of apomorphia administered hypodermically defeated his intention.

MEDICAL MEMBERS OF PARLIAMENT IN NEW SOUTH WALES.

There has been a dissolution of Parliament in New South Wales recently, and several medical men have obtained seats in the new House; I will give you their names in my next, as the

elections are not all concluded. Charles Kinnaird McKellar, M.B., one of the ablest medical men in Australia, was given a portfolio in the late Ministry as Postmaster-General, and was also Minister of Mines. He was chief medical adviser to the late Government, and I do not know where the present Government will find one to replace him if he goes out with the Ministry from that capacity.

SYDNEY AND ADELAIDE HOSPITALS.

The annual report of the Sydney Hospital shows that 2808 cases were admitted during the past year, 1091 being accident cases. The directors are £10,000 overdrawn at the bank, and a new building, estimated to cost £60,000, is considered essential. The report of the Adelaide Hospital shows 1878 admissions during the year, with a daily average of 174; deaths 164. Expenditure for the year £9679. The Government will expend £3000 in improvements and alterations.

MEDICAL PRACTICE IN QUEENSLAND.

I see that a correspondent (a "poitrinaire") asks what are the prospects of practice in Queensland. Queensland, like all the other Australian colonies, is pretty well as much overdone as England with respect to the supply of medical men, and their ratio to the population is even more than the English average. Thirty-one new men have started practice in Brisbane in the last five years. Of course, a good man does well in any town in Australia, but not better, I should say, than elsewhere.

MELBOURNE UNIVERSITY APPOINTMENTS.

At a meeting of the University Council in January, Mr. Baldwin Spencer was appointed to the chair of Biology; Dr. Springthorpe to that of Therapeutics, Dietetics, and Hygiene; J. B Kirkland, Demonstrator of Chemistry; and J. W. Barrett, Demonstrator of Histology. At the February meeting the principle of admitting women to degrees in Medicine was adopted and referred to the Faculty of Medicine.

POISONING BY ANTIMONY IN NEW ZEALAND.

A man has just been condemned to death for poisoning his father-in-law by antimony early in 1886. He was sentenced to penal servitude for life for the attempted murder of his wife, by tartar emetic long administered in her food, and suspicions having arisen after his conviction for that offence, the body of his father-in-law was exhumed, and ample evidence was obtained by analysis that all the viscera were saturated with tartar emetic.

TYPHOID.

This is very prevalent in Victoria at present, but Queensland usually tops the list for the mortality from this disease, though with a much smaller population. Brisbane contributes largely to the sum total of that colony. As writers in the papers here freely point out, typhoid was almost unknown in Brisbane. Now typhoid is the third largest cause of fatality in Queensland. Last year a great many horses suffered from it in Brisbane.

COOKTOWN (QUEENSLAND) HOSPITAL.

This hospital is now over-full, crowded out mostly with fever and other patients from the Bloomfield Tin Mines, and as most of these patients do not belong to the district they are a serious strain on the finances of the hospital, which is in very straitened circumstances.

RAILWAY AMBULANCE CORPS IN NEW SOUTH WALES.

This movement is being carefully and energetically carried out under medical officers appointed by the Railway (State) Medical Board, and at a recent meeting of the corps, medals and certificates were presented to railway employés for proficiency in "first aid."

SALE OF POISONS ACT IN TASMANIA.

A new Act has just been passed in Tasmania to regulate the sale of poisons, which contains a sensible and practical regulation, taken, I believe, from the Canadian Act. Every poison sold is to have a written or printed label containing particulars of the antidote for such poison.

CONSUMPTION HOSPITAL IN MELBOURNE.

A movement is on foot to start an institution of this nature for Victoria, and undoubtedly it would be a boon on account alone of the number of cases ordered out from England to be cured by the Australian climate.

A steamer from China (the *Chingtu*) has landed a small-pox patient at Port Darwin in the northern territory. He is now convalescent, and the cargo, after being fumigated, was released.

The Intercolonial Medical Congress is progressing well, Dr. Verco having been appointed president and Dr. B. Poulton honorary secretary.

March 1st, 1887.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT an extraordinary meeting of the Council held on Thursday, the 5th inst., the minutes of the last meeting were confirmed.

It was referred to the Library Committee to report on the filling of the vacancy caused by the decease of Mr. Chatto, librarian.

The President reported that Sir James Paget had consented to deliver the first lecture on Cancer and Cancerous Diseases.

It was agreed that diplomas be forwarded to those candidates who passed the recent examination in Surgery.

A report, dated April 2nd, 1887, from the committee of delegates of the Royal College of Physicians of London and of the Royal College of Surgeons of England, on the question of the grant by the two Colleges of degrees in Medicine and Surgery, was read, and, after discussion, was referred for further consideration.

A report, dated April 27th, 1887, from the President, senior Vice-President, and Mr. Marshall, on the purposes to which the unoccupied ground on the Embankment belonging to the two Colleges can be applied, was read, and referred to the Committee on the Extension of the College Premises to report thereon.

It was resolved that the Secretary be instructed to prepare an official abstract of the petition for the new Charter, and that the same, when completed, be issued to any Fellow or Member applying for the same. *Notice will be given when this is ready.* The Council do not think it expedient to convene a general meeting of the Fellows and Members of the College to consider and discuss the proposed draft of the Charter, the subjects to which it relates having already been submitted to previous meetings of Fellows and Members.

The picture of the Council in 1884-5, by Mr. H. J. Brooks, was presented by Sir T. Spencer Wells, on behalf of the subscribers to it, and accepted by the Council with thanks.

A letter of the 18th ult., signed, on behalf of the students of the London Hospital, by Mr. F. Howard Taylor, and forwarding a resolution adopted by the students in favour of the grant by the two Colleges of the degree of "M.D. Westminster," was read and referred to the Committee of the two Colleges.

A letter of the 30th ult. was read from the Secretary to the Science and Art Department, South Kensington, offering, through the Secretary of State for Foreign Affairs, to furnish the name of any delegate whom the Council may wish to nominate to attend the International Congress on Hygiene to be held in Vienna in September next; and Sir T. Spencer Wells was nominated by the Council accordingly.

Obituary.

LEON GOSSELIN.

BY the death of Professor Gosselin, which occurred on the 29th ult., after a long and painful illness, French surgery has lost one of its most eminent representatives. M. Gosselin took his degree at the age of twenty-eight; the following year he was successful at the *concours de l'agrégation*, and in 1846 became Director of Practical Anatomy at the School of Medicine. Twelve months before he had gained the position of Surgeon to the Paris Hospitals, in which capacity he was successively attached to the Lourcine, Cochin, Beaujon, La Pitié, and La Charité. In 1858 he was named to the chair of Surgical Pathology, which he occupied until the death of Velpeau, whom he succeeded in 1867 as Professor of Clinical Surgery. Elected a member of the Academy of Medicine in 1860, and of the Academy of Sciences in 1874, in the place of Nélaton,

Gosselin had attained all the distinction which French science has in its gift. But a crowning honour was reserved for the close of his life, and a few months before his death he was called by the Academy of Sciences to its presidency. Professor Gosselin leaves a number of works upon medical and surgical science. Amongst these may be mentioned "L'Ostéite Epiphysaire des Adolescents," "Leçons sur les Hernies Abdominales," the "Compendium de Chirurgie," different memoirs on Septicæmia, Purulent Infection and Urinary Fever, V-Fractures of the Tibia, Tarsalgia of the Young, &c., but his *chef-d'œuvre* is his "Clinique de l'Hôpital de la Charité," a work which ranks justly with Trousseau's "Clinique de l'Hôtel-Dieu."

JOHN MOORE, M.D.

IT was with deep regret that the Belfast public learned on Tuesday of the death of Dr. John Moore. The sad event occurred on Monday, May 2nd, at the Strathearn Hydropathic Establishment, Crieff, Perthshire, under exceedingly melancholy circumstances. For some months past the deceased gentleman had been in very poor health, suffering from mental depression; indeed, he seems never to have recovered the shock of his son's death, which took place about a year back. A week since, acting under medical advice, he left town for a complete change to Crieff. On Sunday evening, it seems, he retired to his room at his usual time, and in the morning was found dead in bed. The unfortunate gentleman had evidently committed suicide, the instrument used being a penknife, which was found beside him. During his brief stay at Crieff Dr. Moore had become known to several of the other visitors in the establishment, but, in spite of his very depressed condition, no danger was apprehended. Dr. Moore took his medical degree in 1851, being one of the first to graduate in the Queen's University. After this he was appointed dispensary medical officer in Glenarm, co. Antrim, and after residing there for several years he removed to Belfast, and was ppointed one of the surgeons to the Royal Hospital, a post he held for sixteen years; and since that he had been a consulting surgeon to the charity. He was also a life governor. He was surgeon to the co. Antrim Gaol, a post which is now at the disposal of the Government. Dr. Moore was the founder and first secretary of the North of Ireland Branch of the British Medical Association, and, also, a few years ago was president. He afterwards became the secretary, a post he held at the time of his death. When, in 1884, the British Medical Association visited Belfast, Dr. Moore was one of the local secretaries. He was also an active member of the Ulster Medical Society, of which at one time he was president, and for a long time he was medical officer to the Tyrone Fusiliers. He was among those who established a centre in Belfast for the St. John Ambulance Association, and for a time acted as secretary. The deceased took an interest in all charitable and philanthropic movements. He was one of the members of the Throne Hospital Committee, and was closely connected with the Young Men's Christian Association (of which he was one of the oldest vice-presidents) and the Prison Gate Mission. He was also local and honorary secretary to the British and Foreign Sailors' Society. Dr. Moore leaves a widow, three daughters, and a son, with all of whom sincere and deep sympathy is felt in their very sad bereavement, and especially with one of his daughters, who accompanied him to Crieff, and who was placed in a most sad and painful situation among those who were comparative strangers.

W. TIFFIN ILIFF, M.D. LOND.

WE record with much regret the death of Dr. William Tiffin Iliff, who was in practice for more than forty years—succeeding his father, Dr. W. T. Iliff, in 1863—at Newington-butts, South London. He was appointed medical officer of health for Newington in the year 1856, and retained the office with perfect satisfaction to the authorities until his death (a period of thirty-one years). Born at Newington in January, 1824, his education was commenced at Shrewsbury, whence he proceeded to Guildford, and afterwards to King's College, London. He entered at Guy's Hospital about 1841, passed successfully through his career, taking medals &c., became a Member of the College of Surgeons and Licentiate of the Apothecaries' Society in 1845, M.B. Lond. in 1855, and M.D. in 1856. He was hon. surgeon to the 7th Surrey R. V., and surgeon to the Royal South London Dispensary. His death took place on April 25th, after six weeks' illness, from extensive disease affecting the pylorus. He was a skilful practitioner, and esteemed as the kind friend of his patients as well as their medical attendant; and the poor of his district have lost a trusted and sympathetic helper, who was always ready to aid them in their time of need.

At the meeting of the Newington vestry on the 27th ult. an intimation was received of the death of Dr. Iliff. A resolution was unanimously adopted recording the vestry's appreciation of the deceased gentleman's services during thirty-one years as medical officer, and expressing sympathy with his family.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed all the necessary examinations were at an extraordinary meeting of the Council on the 5th inst. admitted Members of the College:

Andrews, Frederick William.
Arnison, W. Drewett, M.B. Dur.
Bacot, W. Rickward, L.S.A.
Baldwin, Harry.
Ballance, J. Descarrieres, L.R.C.P.
Barker, Alleyne, H., L.R.C.P.L.
Barr, Horace Carlos, L.R.C.P.L.
Barrett, Edward Ernest.
Barton, Francis A., L.R.C.P.L.
Batchelor, Charles, L.R.C.P.L.
Bishop, Charles Rosser, L.S.A.
Blurton, John Frederick.
Bowden, Ernest Edward, L.S.A.
Bower, William G., L.R.C.P.L.
Brackenbury, H. B., L.R.C.P.L.
Brook, William F., L.S.A.
Brooke, Charles Edward.
Browne, Robley Henry John.
Burke, H. Morton, L.R.C.P.L.
Burt, Cyril Cecil Barron.
Carter, Robert James, L.S.A.
Caudwell, Eber, L.R.C.P.L.
Chilcott, Arthur E., L.R.C.P.L.
Clarke, A. B., L.K.Q.C.P.I.
Cockill, W. Baron, L.R.C.P.L.
Connolly, F. Glynn, L.R.C.P.L.
Cox, A. H. Lissant, L.R.C.P.L.
Coy, W. Filmer, M.D. Kingston.
Dalgliesh, John W., L.R.C.P.L.
Dane, Robert, L.S.A.
Davenport, Cecil J., L.R.C.P.L.
Davies, Hughes Reid.
Ellison, E. Henry, M.A., L.S.A.
Farrar, Reginald Anstruther.
Fox, George Martin.
Fox, S. C. Gundry, L.R.C.P.L.
Gardner, Ernest F., L.R.C.P.L.
Garman, E. C., L.R.C.P.L.
Giddings, George Thomas.
*Goodman, Roger N., L.R.C.P.L.
Goodwin, F. C., L.R.C.P.L.
Gowan, Bowie Campbell, L.S.A.
*Green, Conrad T., L.R.C.P.L.
Greig, Duncan McBean.
Hallilay, Richard Percy, L.S.A.
Hamel-Smith, Lionel.
Harris-Liston, Llewellyn, L.S.A.
Harrison, Henry Leeds.
Hensley, Arthur Egerton, L.S.A.
Hinnell, Joseph Squier, L.S.A.
Hosegood, Samuel Price, L.S.A.
Hudson, Henry, L.R.C.P.L.
Hutton, John, L.R.C.P.L.
Iddon, Thomas Whittaker.
*James, Arthur William, L.R.C.P.
Jaques, John Warren, L.R.C.P.
Joseph, Arthur Hill.
Kerans, Felix.
King, Preston, L.S.A.
Labey, Julius, L.R.C.P.L.
Lankester, Francis J., L.R.C.P.L.
Lawrence, Thomas Wm. Pelham.
Lumley, Charles Armstrong.
McLean, W. W. Laroche, L.S.A.
McLurg, John, M.D. Toronto.
McVety, A. F., M.D. Kingston.
Marston, Henry John, L.R.C.P.
Megginson, Mowbray.
Metzgar, Charles, L.R.C.P.L.
*Miley, Miles, L.R.C.P.L.
Mould, William T., L.R.C.P.L.
Naumann, John C. F., L.S.A.
Osmond, Edward B., L.R.C.P.L.
Parry, Wm. T., M.D. Toronto.
Parsons, Charles O., L.R.C.P.L.
Paul, Arthur E., L.R.C.P.L.
*Peake, W. Pemberton, L.R.C.P.L.
Penno, Francis P. L., L.S.A.
Pitcairn, John James, L.R.C.P.L.
Pratt, William Sutton, L.S.A.
Pullan, H. N., L.K.Q.C.P.I.
Pye, Thomas, L.R.C.P.L.
Rees, John Morgan.
Roberts, Shirley, L.K.Q.C.P.I.
Robson, R. Barker, M.B. Durh.
Rutherford, John V. Walton.
Sharman, J. S. W. E., L.R.C.P.L.
Short, James Joseph, L.S.A.
Shute, G. Sidney, L.R.C.P.L.
Sidebotham, E. J., M.B. Cantab.
Skill, James Maurice.
Smith, Arthur H., L.R.C.P.L.
Smith, E. S., L.R.C.P.L.
Somerset, Edward, L.S.A.
Stokes, F. Wm., L.K.Q.C.P.I.
Stuart, Thomas R., L.R.C.P.L.
Swyer, Robert, L.S.A.
Thompson, W. H., M.D., Q.U.I.
Todd, H. B., L.R.C.P.L.
Travers, A. Lindsay, L.R.C.P.L.
Turnbull, George Lindsay.
Turner, Ernest Blaker.
Tweed, E. R., L.R.C.P.L.
Venis, Walter, L.S.A.
Vincent, H. B., L.R.C.P.L.
Vinter, S. Garratt, L.R.C.P.L.
Waites, R. F., L.R.C.P.L.
Walker, Benjamin, L.S.A.
Wallis, Maurice E. Arnold.
Ward, John Alfred, L.S.A.
Wedgwood, Wm. B., L.S.A.
Wheeler, James Atkin.
Whiston, Phillip H., L.R.C.P.L.
Wigglesworth, V., L.R.C.P.L.
Wight, John Cam, M.B. Melb.
Williams, William, L.S.A.
Woods, Ninian Wildridge.

* Candidates under the Regulations of the Examining Board in England.

UNIVERSITY OF CAMBRIDGE.—At a congregation held on the 30th ult., the following degrees were conferred:—

BACHELOR OF MEDICINE.—Frank Edward Nichol, Gonville and Caius; William John Hill, Jesus.

BACHELOR OF SURGERY.—Frank Edward Nichol, Gonville and Caius.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the April Examination the following candidate was admitted a Licentiate:—

Barnes, Ernest W., L.K.Q.C.P.I., Liverpool.

The following candidate obtained the qualification in Public Health:—

Kiddle, Walter, M.B. Dub., Surgeon, Medical Staff.

The following candidate having passed the full Exami-

nations for the Fellowship, was admitted a Fellow on the 2nd inst.:—

Dalziel, Thomas Kennedy, M.B., C.M. Edin., Regent-terrace, Glasgow.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—At recent examinations the following were admitted Fellows of the College:—

Curran, Francis G. Adye, A.M.S. | Sawyer, R. H. Stewart, A.M.S.

COLLEGE OF PHYSICIANS IN IRELAND.—At the April examinations the following obtained licences in Medicine and Midwifery of the College:—

MEDICINE.—Patrick Halion Fox, Bartley Hynes Hopkins, Edward Stewart Lewer, Joseph Maguire, A. Kennedy Forbes McCutcheon, Samuel McKee, Thomas Alexander Murray, Humphreys Robert Peare, Michael Riordan, Shirley Roberts, Nelson Cameron Sclater, William Thomas Steele, James St. Johnston, Jabez Davenport Wardle.

MIDWIFERY.—Edward Stewart Lewer, Joseph Maguire, Samuel McKee, Humphreys Robert Peare, Shirley Roberts, William Thomas Steele, and Jabez D. Wardle.

The under-named have been admitted Fellows:—

W. Beatty. | E. McDowel Cosgrave.
Alexander Duke.

SOCIETY OF APOTHECARIES.—The following gentlemen, having satisfied the Court of Examiners as to their knowledge of the Science and Practice of Medicine, Surgery, and Midwifery, received certificates entitling them to practise as Licentiates of the Society on April 28th:—

Bowden, Ernest Edward, Gorsefield, Patricroft.
King, Preston, Barton-place, Bury St. Edmunds.
Rees, John Morgan, Machynlleth.
Short, J. J., Shortlands, Spencer Park, Wandsworth Common.
Somerset, Edward, Newbury, Berks.
Stephens, Richard John, Woodlands, Old Charlton.

OXFORD UNIVERSITY. — Dr. Brooks has been appointed Lichfield Clinical Lecturer in Medicine, and Mr. Horatio Symonds Lichfield Clinical Lecturer in Surgery, each for two years.

THE LEVEE.—John Sherburn, Esq., M.B., C.M., in his capacity of Sheriff of Kingston-upon-Hull, was present at the *levée* held at St. James's Palace on the 25th ult.

THE ROYAL SOCIETY.—Amongst the candidates selected by the Council to be recommended for election into the Royal Society are Dr. W. R. Gowers and Dr. J. T. Cash.

THE proceeds of the recent ball at the Brighton Royal Pavilion, in aid of the funds of the local Hospital for Women and Children, amount to £31.

NATIONAL HEALTH SOCIETY.—The annual general meeting of the Society was held at 44, Berners-street, on the 2nd inst. The report showed a great increase in the number of health lectures given in poor districts in London during the past year.

MEDICAL MAGISTRATE.—The Lord Chancellor, upon the unanimous recommendation of the Town Council and the Borough Bench of Magistrates, has placed the name of Mr. Vincent Jackson upon the Commission of the Peace for Wolverhampton.

PRESENTATIONS. — On the 23rd ult. Mr. O. B. Shelswell was presented by the officers of the Holborn Union Infirmary with an electro-plate tea and coffee service, on the occasion of his resigning his post as assistant medical officer at that institution, to take an appointment under the same Board of Guardians, at their new workhouse at Mitcham.——On the 26th ult., Mr. E. T. Ash was presented by his colleagues on the staff of the Brighton Dental Hospital with an illuminated address, on the occasion of his leaving England for South America.——In recognition of Mr. H. B. Vincent's services as a lecturer, the East Dereham members of the various classes in connexion with the St. John Ambulance Association have presented him with a hall clock and some volumes of medical literature, and the ladies of the Gressenhall class have also presented him with a handsome ivory paper knife.——At a meeting of students of the Charing-cross Hospital, held on Thursday last, in the Board-room, a testimonial was presented to H. Montague Murray, M.D., M.R.C.P., on the occasion of his marriage and in recognition of his services as medical registrar during the last five years. The testimonial was presented by Mr. C. P. Oliver, and took the form of a clock of the time of Henry II., being copied from the catalogue of the Archæological collection of Prince Soltykoff.

DR. EDWARD PALMER, the medical superintendent of the Lincoln County Asylum, having, after thirty-nine years' services, sent in his resignation, the Visiting Committee have submitted a recommendation to the Quarter Sessions of Lindsey, Kesteven, Holland, and the Town Councils of Lincoln, Stamford, and Grantham, to award him a superannuation allowance of £600 per year.

ANNIVERSARIES OF BELGIAN MEDICAL SOCIETIES.—The Antwerp Medical Society has recently held a grand meeting in honour of the fiftieth anniversary of the Society's foundation. The mayor of Antwerp and Professors Lefebvre, Van Beneden, Dumoulin, Boilée, and Thiry were present at the banquet.—The Belgian Society of Public Medicine has just celebrated its tenth anniversary, under the presidency of M. Kuborn. There was a theatrical entertainment and meetings of various sections. At the grand final meeting the King and his suite and the Minister of the Interior were present.

UNIVERSITY OF LONDON.—The following Examiners for 1887-88 were elected at a meeting of the Senate on the 27th ult.:—Chemistry: Prof. J. Emerson Reynolds, M.D., F.R.S., and Prof. W. A. Tilden, D.Sc., F.R.S. Botany and Vegetable Physiology: Prof. Bayley Balfour, M.D., D.Sc., F.R.S., and Prof. F. Orpen Bower, M.A. Comparative Anatomy and Zoology: Prof. E. Ray Lankester, M.A., F.R.S., and Adam Sedgwick, M.A., F.R.S. Practice of Medicine: William Cayley, M.D., and Prof. F. T. Roberts, M.D., B.Sc. Surgery: W. Morrant Baker, Esq., and Prof. Christopher Heath. Anatomy: Prof. D. J. Cunningham, M.D., C.M., F.R.S.E., and Prof. John Curnow, M.D. Physiology: Prof. E. A. Schäfer, F.R.S., and Prof. Gerald F. Yeo, M.D. Obstetric Medicine: F. H. Champneys, M.A., M.B., and John Williams, M.D. Materia Medica and Pharmaceutical Chemistry: J. Mitchell Bruce, M.D., M.A., and T. Lauder Brunton, M.D., D.Sc., F.R.S. Forensic Medicine: Prof. G. V. Poore, M.D., B.S., and Thomas Stevenson, M.D.

QUEEN'S COLLEGE, BELFAST.—The following is the official list of the results of the medical examinations in April:—Anatomy and Physiology: Third Year—J. M. Hall. Second Year—S. A. Powell, B.A.; H. L. Atkinson, B.A.; James Fulton; Robert Forsyth. First Year—John Jamison; Douglas Maconachie. Practical Anatomy: Third Year—J. M. Hall; R. C. McCullagh, B.A., and D. C. Smiley, equal; James Buchanan; C. E. Shaw, M.A.; James Hunter. Second Year—James Fulton; S. H. Withers; James M'Connell and Nathaniel Morton, equal. First Year—(J. S. B. M'Murray, non. mat.); K. B. Barnett; James Adrian; (W. A. Collier, non. mat.). Medicine: Second Year—John Campbell, M.A.; R. C. M'Cullagh, B.A. First Year—Robert Wilson and M. H. Quarry, equal; Robert Thomson. Surgery: Senior—John Campbell, M.A., and James Hunter, equal; R. C. M'Cullagh, B.A.; C. E. Shaw, M.A. Junior—J. M. Hall; Robert Wilson; M. H. Quarry. Materia Medica: Nathaniel Morton; W. H. Cox; H. J. Anderson; James Fulton. Midwifery: D. C. Smiley; Robert Thomson; Robert Wilson and C. E. Shaw, M.A., equal. Practical Chemistry: John Jamison and E. W. M'Bride, equal; Nathaniel Morton. Zoology: G. S. Hart; Andrew Fullerton; Thomas Jackson.

SCHOLARSHIPS AND PRIZES.—At the *London Hospital Medical College*, the hospital scholarship, value £20, for proficiency and zeal in clinical medicine, has been awarded to Mr. C. R. Killick, and an honorary certificate to Mr. Benjamin Walker; the hospital scholarship, of the value of £20, for proficiency and zeal in clinical surgery, to Mr. Evelyn Oliver Ashe, and honorary certificates to Mr. Owen Meredith Jones and Mr. Benjamin Walker; and the Duckworth-Nelson prize in practical medicine and surgery, value £10, to Mr. Benjamin Walker, and an honorary certificate to Mr. Owen Meredith Jones. — At the *Middlesex Hospital Medical School*, the Broderip scholarships, of the value of £30 per annum and tenable for two years, has been awarded to Mr. W. H. Vickery, and that of £20 per annum, tenable for two years, to Mr. E. E. Lewis.—At *St. Thomas's Hospital Medical School*, the William Tite scholarship of £30 has been awarded to Mr. Henry Burden; the Musgrove scholarship, of £42 per annum, tenable for two years, to Mr. Arthur Francis Stabb; the second tenure of the Peacock scholarship to Mr. Francis Charles Abbott; the Mead medal to Mr. W. W. Ord; and the Cheselden medal and the Treasurer's gold medal for general proficiency and good conduct to Mr. Frank Fawssett.

OPHTHALMOLOGICAL SOCIETY.—A special meeting of this Society is to be held on June 23rd for the purpose of collecting facts in reference to toxic amblyopia. Communications, whether written or *viva voce*, which bear on the subject will be acceptable. Facts in elucidation of the following points are particularly desirable:—1. Cases of true alcoholic amblyopia—i.e., failure of central vision in drinkers who do not use tobacco in any form. 2. Cases of recovery from any form of toxic amblyopia—e.g., from tobacco, bisulphide of carbon, &c.—without complete discontinuance of the toxic agent. 3. Cases of complete persistent pallor of the optic disc consequent on a long-continued exposure to any of these forms of poisoning. 4. Do second attacks of central amblyopia ever occur, whether induced by the original agent or by any other?

HOSPITAL FOR EPILEPSY AND PARALYSIS, REGENT'S-PARK.—The annual meeting of this institution was held on Wednesday at the Eyre Arms Assembly-rooms. The report, the adoption of which was moved from the chair by General Maclagan, R.E., laid stress on the great need of funds generally prevailing among the London hospitals, and congratulated the supporters that the debt had only increased £60 during the past year. He expressed the hope that the "jubilee" which marked among the Jews a time for "setting free" from bondage would be characterised by a similar liberation of the hospitals from the "bondage of debt." The Right Rev. Bishop Perry seconded the motion. The reappointment of the retiring members of the committee was moved by Sir W. Magnay, Bart., who said that the administration by his colleagues of the funds at their disposal was a far easier task than the collection of funds to administer. Mr. R. B. Chapman alluded, as a regular visitor to the wards, to the distressing nature of the diseases treated in the hospital, and to the great need of such an institution.

MEDICAL NOTES IN PARLIAMENT.

The Prevention of Rabies and Hydrophobia.

In the House of Lords on the 29th ult., Lord Mount-Temple called attention to the regulations for the prevention of rabies and hydrophobia. He considered the present method of muzzling both injurious to the dogs and inefficient for the purpose of preventing the spread of the disease. The principle upon which he had proceeded in framing his Bill was to place a responsibility upon the owner of the dog, who should have presented to him such a statement of the premonitory symptoms of rabies as were set forth in one of the Orders issued by the Agricultural Department of the Council. In addition to the present register of persons who had paid the dog tax and obtained a license, there ought to be a register of the dogs themselves as well as of the owners. When the tax was paid, he proposed that there should be given to the owner of the dog a badge bearing a number, which should be placed on the collar of the animal. This number being registered, could always be seen; and if a dog was found wandering about in the streets or roads without a collar, it would be *prima-facie* evidence that the animal was ownerless, when it might be taken up by the police. The Bill did not propose to interfere with any of the existing regulations, but placed it within the power of the authorities to add the method of registration he had described and placing responsibility upon the dog owner as an alternative for the muzzle.—Lord Cranbrook thought the ordinary powers only required to be put in force to stamp out rabies. In 1885 there were not less than seventy-five cases of rabies in the metropolitan area, and besides that twenty-eight people died of hydrophobia in and close to London. Muzzling was enforced, and the number of cases immediately fell. The best authorities were of opinion that the disease might be stamped out altogether by a universal system of muzzling.—The Earl of Kimberley hoped the authorities in the metropolis and throughout the country would not be deterred by any outcry that might be raised against the muzzling of dogs from doing what was possible to stamp out the disease.—The Bill was read a first time.

The Cold Bath for Lunatics.

In the House of Commons, on the 3rd inst., Dr. Kenny asked the Chief Secretary, with reference to the case of "Lamb *v.* Ashe," tried recently before the Recorder of Dublin, under what rule of Privy Council or order of Lunacy Department the use of the cold plunge bath was permitted as a punishment for lunatics.—Colonel King-Harman said the use of the cold plunge bath for curative purposes had been sanctioned under a rule of the Dundrum Asylum, but the Irish Government had now given orders for its discontinuance.

Impure Water-supply.

In reply to Mr. Norton, Mr. Forwood stated that a long report had been received with reference to the supply of impure water to Her Majesty's ships at Malta, resulting in a serious outbreak of enteric fever, and that the tanks were periodically tested and cleansed.

Public Sanitation.

Mr. F. Powell gave notice that on an early date he would introduce a Bill to amend and extend the Public Health Act of 1875, and to consolidate the statutes relating to the public health which had been passed since that year.

Leave to introduce the Temporary Dwellings Bill was obtained on Wednesday. It has for its objects the education of gipsy and van children and the bringing of sanitation into their homes.

BOOKS ETC. RECEIVED.

BAILLIÈRE, TINDALL, & COX, King William-street, Strand, London.
Brief Statement of the so-called "Salisbury Plans" of Treating, by Alimentation. By J. H. Salisbury, M.D. pp. 64.
A Manual of Veterinary Hygiene. By Fred. Smith, M.R.C.V.S. pp. 475, Illustrated.

CHURCHILL, J. & A., New Burlington-street, London.
The Treatment of Spina Bifida by a New Method. By James Morton, M.D., L.R.C.S.Ed. pp. 228, with 3 plates.

GRIFFIN, C., & Co., Exeter-street, Strand, London.
Year-book of the Scientific and Learned Societies of Great Britain and Ireland. Compiled from Official Sources. Fourth Annual Issue. pp. 223.

HUGHES, JOHN, Pilgrim-street, Ludgate-hill, London.
The Principles and Practice of School Hygiene. By Alfred Carpenter, M.D.Lond. pp. 388, with Illustrations.

KEGAN PAUL, TRENCH, & Co., Paternoster-square, London.
The Prevention of Consumption: a Mode of Prevention founded upon a new Theory of the nature of the Tubercle Bacillus. By C. Candler, Melbourne. pp. 240.

LEWIS, H. K., Gower-street, London.
Photography of Bacteria. By Edgar M. Crookshank, M.B.Lond., F.R.M.S. pp. 64, with 88 Photographs, reproduced in autotype.
Treatment of Disease in Children, including the outline of Diagnosis and the chief Pathological Differences between Children and Adults. By Angel Money, M.D., M.R.C.P. pp. 288.
The Officinal Materia Medica. By F. T. Roberts, M.D., B.Sc., F.R.C.P. Second Edition. pp. 543.
The Essentials of Bandaging. By Berkeley Hill, M.D.Lond., F.R.C.S. Sixth Edition, revised and enlarged. pp. 385, with Illustrations.
Congenital Club-foot, its Nature and Treatment. By R. W. Parker. pp. 105, with Illustrations.
Syllabus of Materia Medica. By Alexander Harvey, M.D., and A. D. Davidson, M.D. Eighth Edition. pp. 64.

LIVINGSTONE, E. & S., Edinburgh.
Anatomy of the Brain and Spinal Cord. By J. R. Whittaker. pp. 135, with Engravings, some coloured.

LONGMANS, GREEN, & Co., Paternoster-row, London.
A Text-book of Organic Materia Medica. By Robert Bentley, M.R.C.S., F.L.S. pp. 415, with many Illustrations.

MACLACHLAN & STEWART, Edinburgh. SIMPKIN & MARSHALL, London.
The Dissector's Guide: a Manual for the use of Students. By D. J. Cunningham, M.D., &c. Head and Neck. pp. 482, with 57 Illustrations.

MACMILLAN & Co., London and New York.
A Text-book of Pharmacology, Therapeutics, and Materia Medica. By T. Lauder Brunton, M.D., D.Sc., F.R.S. Adapted to the United States Pharmacopœia by F. H. Williams, M.D.Boston. Third Edition. pp. 1261, with Illustrations.

NEW SYDENHAM SOCIETY, London.
Lexicon of Medicine and the Allied Sciences. By Henry Power, M.B., and Leonard Sedgwick, M.D. Part 13. Her—Ilm.

REMINGTON & Co., Henrietta-street, Covent garden, London.
The Misuse of Marriage, or Hymen Profaned. A Voice. pp. 221.

SMITH, ELDER, & Co., Waterloo-place, London.
Post-mortem Handbook, or How to Conduct P.M. Examinations for Clinical and for Medico-legal Purposes. By Thomas Harris, M.D.Lond., M.R.C.P. pp. 78, with Illustrations.
Neurectasy, or Nerve-stretching for the Relief or Cure of Pain. Bradshawe Lecture. With Appendix. By John Marshall, F.R.S., &c. pp. 53, with Illustrations.

VIZETELLY & Co., Catherine-street, London.
Dr. Phillips: a Maida-vale Idyll. By Frank Danby. Second Edition. pp. 342.

WARD & DOWNEY, York-street, Covent-garden, London.
Travels in the Interior; or the Wonderful Adventures of Luke and Belinda. By L. T. Courteney. Edited by a London Physician. pp. 316, with Illustrations.

L'Enseignement actuel de l'Hygiène dans les Facultés de Médecine en Europe; par le Dr. W. Loewenthal (Soudier, Paris).—How to Appeal against your Rates; by A. D. Wilson, M.A. (S. Wilson, London).—The Imperial Review, April (Melbourne).—The Jubilee Penny Cookery Book (Simpkin and Marshall).—Index Medicus (Index to Vol. VIII.).—England as a Petroleum Power; by C. Marion (Andersen, Cockspur-street).—Journal of the College of Science, Imperial University, Japan, Vol. I., Part 1.—Bibliographie des Sciences Médicales (Baillière et Fils, Paris).—Botany Notes, Parts I. and II.; by Alex. Johnstone, F.G.S., 2s.—The Defence of Insanity in Criminal Cases; by L. F. Everest, M.A., LL.D. (Stevens and Sons). 1s. 6d.—Scheme of Case-reporting; arranged by W. H. Allchin, M.B. &c. (Lewis). 1s.—L'Enucléation ou Extirpation Intraglandulaire du Goître Parenchymateux; par le Dr. S. Kesser (Schiller, Paris).—Notes on Chinese Materia Medica; by Chas. Ford, F.L.S.—Transactions of the Medical and Physical Society of Bombay, No. IX.—Paracelsus-Forschungen; von Drs. E. Schubert and K. Ludhoff; erstes Heft.—The London Hospitals and the Jubilee; by H. Nelson Hardy, F.R.C.S.Ed.—Index Medicus, Vol. IX., No. 3.—Magazines for May: Good Words, Sunday Magazine, Leisure Hour, Sunday at Home, Boys' Own Paper, Girls' Own Paper, Scribner's Monthly.—Die Diagnose der Blasen-und Nierenkrankheiten mittelst der Harnleiterpincette; von Dr. M. Tuchmann (Hirschwald, Berlin).

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BELL, THEODORE, B.A., M.B., B.Ch.Dub., has been appointed Medical Officer to the Morchard Bishop District of the Crediton Union.

CARPENTER, G. ALFRED, M.B. Lond., has been appointed Resident Medical Officer to the Evelina Hospital for Children, vice Albert Martin, M.D.Lond., resigned.

COOK, THOMAS D., M.B., C.M.Glas., has been appointed Medical Officer for the Torquay District of the Newton Abbot Union.

DYER, BERNARD, B.Sc., F.C.S., has been appointed Public Analyst for the City of Truro.

ESSOR, HENRY C., M.R.C.S., L.S.A., has been appointed Surgeon to the Cardiff Eye and Ear Hospital.

FOX, E. L., M.A., M.B., B.C.Cantab., M.R.C.S., has been appointed Senior House-Surgeon to the Liverpool Children's Infirmary, vice Francis Johnston, resigned.

GOODALL, JOHN K., L.R.C.S., L.R.C.P. Ed., has been reappointed Medical Officer of Health for the Bolsover District of the Chesterfield Union.

GRANT, DAVID, M.A., M.B.Edin., has been appointed Lecturer on Materia Medica, Medical Botany, and Elementary Therapeutics in the University of Melbourne.

GREEN, R. W., M.R.C.S., has been appointed House-Surgeon to the Leeds General Infirmary.

HARTLEY, HORACE, M.R.C.S., L.R.C.P.Ed., has been appointed Medical Officer for the Workhouse and for the Stone District of the Stone Union.

NICHOLSON, C., M.R.C.S., has been appointed House-Surgeon to the Leeds Infirmary.

PARRY, JOHN WILLIAM, L.R.C.P., L.R.C.S.Ed., L.F.P.S.Glas., has been appointed Surgeon to the Bettisfield and Coleshill Collieries, Bagillt.

PEAKE, JOSEPH, L.F.P.S.Glas., L.S.A., has been appointed Medical Officer for the Parish of Falkirk, vice Hadden, deceased.

PEARCEY, JAMES J. W., L.R.C.S., L.R.C.P.Ed., has been appointed Medical Officer for the Howden District of the Auckland Union.

PRICE, ARTHUR, M.R.C.S., L.S.A., has been appointed Surgeon to Her Majesty's Prison at Winson-green, Birmingham, vice Waterton, deceased.

PRIMROSE, ALEXANDER, M.B., C.M.Edin., has been appointed House-Surgeon to the Paddington-green Children's Hospital, vice Leonard G. Guthrie, M.A., M.R.C.S., L.S.A., whose appointment has expired.

ROBERTS, WILLIAM LAKE, M.R.C.S., L.M., L.S.A., has been appointed Surgeon to the Bradford District of the Great Northern Railway.

TRAVERS, WILLIAM, M.D., F.R.C.S., late Senior Assistant Physician to the Chelsea Hospital for Women, Fulham-road, S.W., has been appointed Physician to that institution.

WARNER, F. A., M.R.C.S., L.R.C.P., L.S.A., has been appointed Surgeon to St. Gabriel's Hospital for Infants, Chelsea, vice J. Cantlie, F.R.C.S., resigned; also Assistant Medical Officer to St. John's Lying-in Home, Gunter-grove, S.W.

WILSON, FRANCIS, L.R.C.S., L.R.C.P.Ed., has been appointed Medical Officer for the North Keighley District of the Keighley Union.

Vacancies.

In compliance with the desire of numerous subscribers, it has been decided to resume the publication under this head of brief particulars of the various Vacancies which are announced in our advertising columns. For further information regarding each vacancy reference should be made to the advertisement.

BLACKBURN AND EAST LANCASHIRE INFIRMARY. — House-Surgeon. Salary £100 per annum, with board, washing, and lodging.

CHARING-CROSS HOSPITAL, Strand, W.C.—Assistant Surgeon. Medical Registrar.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—Two Clinical Clerks for the out-patient department.

HOSPITAL FOR WOMEN, Soho-square, W.—Clinical Assistants. Fee for course of three months, £5 5s.

LINCOLNSHIRE COUNTY LUNATIC ASYLUM, Bracebridge. — Medical Superintendent. Salary and emoluments £400 per annum, with furnished house, coals, gas, milk, vegetables, and washing.

LIVERPOOL INFIRMARY FOR CHILDREN. — Assistant House-Surgeon. Board and lodging in lieu of salary.

LIVERPOOL STANLEY HOSPITAL.—Senior House-Surgeon. Salary £80, with board, &c.

MADAGASCAR MEDICAL MISSION. — Superintendent of Hospital &c. Salary £150 to £200 a year, house, outfit, &c.

MASON SCIENCE COLLEGE, Birmingham.—Professor of Physiology.

NATIONAL DENTAL HOSPITAL, Great Portland-street, W. — Assistant Dental Surgeon.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury. — Senior House-Physician. Salary £100 per annum. Junior House-Physician. Salary £50 per annum. In each case board and apartments are supplied in the hospital.

ROCHDALE INFIRMARY AND DISPENSARY.—Resident Medical Officer. Salary £80 per annum, board, &c.

ROYAL ALBERT HOSPITAL, Devonport. — Assistant House-Surgeon. Board and lodging in the hospital, but no salary.

STAFFORDSHIRE GENERAL INFIRMARY, Stafford. — Assistant House-Surgeon. Board and lodging, but no salary.

ST. MARY'S HOSPITAL, Paddington, W.—Physician in charge of out-patients.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—Lecturer on Systematic Physiology.

TEIGNMOUTH, DAWLISH, AND NEWTON INFIRMARY AND CONVALESCENT HOME.—House-Surgeon and Dispenser. Salary £71 per annum, with board (beer excepted), lodging, and washing.

WEST SUSSEX, EAST HANTS, AND CHICHESTER GENERAL INFIRMARY AND DISPENSARY.—House-Surgeon and Assistant Secretary. Salary £100 a year, with board and rooms.

Births, Marriages, and Deaths.

BIRTHS.

BROWN.—On the 16th ult., at Penang, the wife of Wm. Carnegie Brown, M.D., of a son.

CHIPPERFIELD.—On the 21st ult., at Bloxam, the wife of Pearse Chipperfield, L.R.C.P., M.R.C.S., of a daughter.

GREENWOOD.—On the 1st inst., at High-street, Clapham, the wife of C. D. Greenwood, M.R.C.S., of a son.

HABERSHON.—On the 1st inst., at Upper Wimpole-street, W., the wife of S. Herbert Habershon, M.B.Cantab., M.R.C.P.Lond., M.R.C.S., of a son.

MILNE.—On the 26th ult., at Accrington, the wife of Thomas Milne, M.A., M.D., of a son.

PENFOLD.—On March 17th, at Sandhurst, Victoria, the wife of O. Penfold, M.R.C.S., L.S.A., of a daughter.

MARRIAGES.

CARTER—JONES.—On the 27th ult., at St. Peter's Church, Bournemouth, W. Fitzwilliam Carter, L.R.C.S.I., L.R.C.P.Ed., to Florence Archer, daughter of John Averay Jones, Esq., J.P., of Vale House, Clifton.

COTES—ALLINGHAM.—On the 30th ult., at St. George's, Hanover-square, Charles B. Cotes, M.B.Cantab., to Elizabeth Christiana (Lily), elder daughter of Wm. Allingham, of Grosvenor-street, W.

DAVENPORT—SIEVWRIGHT.—On the 28th ult., at Holy Trinity Church, Hobart, Tasmania, Arthur Frederick Davenport, M.B.Lond., M.R.C.S., of St. Kilda, Melbourne, to Alline, daughter of the late Major Allan Sievwright, Royal Artillery.

FRITH—FARNCOMB.—On the 28th ult., at Hollington Church, Baptist Gamble Frith, B.A., M.B., B.Ch., to Georgina Anne, eldest daughter of Edward Farncomb, Esq., of Ashbrooke-park, Hollington.

GARSON.—ASPINALL.—On the 20th ult., at Bebington Parish Church, W. R. J. Garson, M.B., to Emmeline, fifth daughter of Clarke Aspinall, Esq., J.P., and Coroner of Liverpool.

MILES—KING.—On the 28th ult., at Melbourne, Victoria, Geo. E. Miles, M.R.C.S., L.R.C.P.Lond., to Ada Louise, youngest daughter of the Rev. Richard King, formerly of Prestwich.

PARSLOE—RAY.—On the 28th ult., at Holy Trinity Church, Worthing, Henry Heath Parsloe, M.R.C.S., L.R.C.P., to Emily Ann, daughter of Henry R. Ray, Heine-terrace, Worthing.

SNOW—JARRETT.—On the 20th ult., at St. Matthew's Church, City-road, London, Lionel Mason Snow, M.R.C.S., L.R.C.P. Lond., to Jennie, eldest daughter of Evan Jarrett, Esq., of Barnsbury-park, N.

WEST—JACOB.—On the 4th inst., at St. Peter's Church, Dublin, by the Rev. John Alexander Jacob, Rector of St. Saviour's, Bath, uncle of the bride, assisted by the Rev. Canon Jellett, and by the Rev. H. B. Noyes, M.A., Francis Robert Leighton, second son of the Rev. William West, Rector of Randalstown, Suffolk, to Florence Alice, eldest surviving daughter of Archibald Hamilton Jacob, M.D., F.R.C.S., of 23, Ely-place, and "Lucerne," Sandycove.

DEATHS.

FOX.—On the 3rd inst., at the Park Hotel, Preston, Wilson Fox, M.D.

HALKET.—On the 17th ult., at sea, on his homeward voyage from Australia, Laurence John Halket, L.R.C.P.Lond.

NOLLOTH.—On the 26th ult., at 13, North-terrace, Camberwell, Edward Nolloth, retired Fleet Surgeon, R.N., M.R.C.P., F.R.C.S., sixth son of the late John Nolloth, Esq., of 1, North-terrace, Camberwell, aged 73.

THOMPSON.—On the 29th ult., at Winterton House, Westerham, Kent, Charles Robert Thompson, M.R.C.S., aged 57.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

Monday, May 9.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10.30 A.M., and each day at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M., and each day at the same hour.
CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M.; Thursday, 2.30.
ST. MARK'S HOSPITAL.—Operations, 2 P.M.; Tuesday, 2.30 P.M.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITALS.—Operations, 2 P.M., and each day in the week at the same hour.
ROYAL INSTITUTION.—5 P.M. General Monthly Meeting.
SOCIETY OF ARTS.—8 P.M. Mr. J. M. Thomson: The Chemistry of Substances taking part in Putrefaction and Antisepsis.

Tuesday, May 10.

GUY'S HOSPITAL.—Operations, 1.30 P.M. and on Friday at the same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 4 P.M.; Friday, 2 P.M.
CANCER HOSPITAL, BROMPTON.—Operations, 2.30 P.M.; Saturday, 2.30 P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 2.30 P.M.
ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 1.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M.
ROYAL INSTITUTION.—3 P.M. Prof. W. E. Ayrton: Electricity.
MEDICO-PSYCHOLOGICAL ASSOCIATION.—4 P.M. Quarterly Meeting. Meeting of Council at 2.30. Discussion on the proposed Lunacy Law Amendment Bill.
SOCIETY OF ARTS.—8 P.M. Mr. H. J. Tarver: The Architecture of London Streets.
ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8.30 P.M. Mr. Arthur E. Barker: A case of Intussusception of the Upper End of the Rectum due to Obstruction by a New Growth, Excision of the Intussusception, Suture of the Cut Ends of the Bowel, Complete Recovery.—Mr. Stanmore Bishop: Results of an Experimental Inquiry as to the Best Method of Restoring the Canal after Removing Portions of the Small Intestine (communicated by Sir Spencer Wells).

Wednesday, May 11.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour. Ophthalmic Operations, Tuesday and Thursday, 1.30 P.M. Surgical Consultations, Thursday, 1.30 P.M.
ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.
LONDON HOSPITAL.—Operations, 2 P.M.; Thursday & Saturday, same hour.
GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Saturday, 2 P.M. Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.
KING'S COLLEGE HOSPITAL.—Operations, 3 to 4 P.M.; Friday, 2 P.M. Saturday, 1 P.M.
CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9 A.M. Saturday, same hour.
SOCIETY OF ARTS.—8 P.M. Mrs. Ernest Hart: Cottage Industries in Ireland.
ROYAL MICROSCOPICAL SOCIETY.—8 P.M. Dr. Maddox: On the Different Tissues found in the Muscle of a Mummy.
EPIDEMIOLOGICAL SOCIETY OF LONDON.—8 P.M. Dr. Arthur Ransome: Some Evidence respecting Tubercular Infective Areas.
BRITISH GYNÆCOLOGICAL SOCIETY.—8.30 P.M. Specimens will be shown by Drs. Granville Bantock, Fancourt Barnes, Grigg, and others.—Dr. Routh: On the Various Modes of Treatment to be adopted for the Worst Cases of Uterine Flexions.

Thursday, May 12.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Ophthalmic Operations, Friday, 1.30 P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.
NORTH-WEST LONDON HOSPITAL.—Operations, 2.30 P.M.
ROYAL INSTITUTION.—3 P.M. Prof. Dewar: The Chemistry of the Organic World.

Friday, May 13.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
CLINICAL SOCIETY OF LONDON.—8.30 P.M. Mr. Godlee: Some cases of Abdominal Cyst following Injury.—Dr. Vivian Poore: A case of Spasmodic Torticollis, probably due to Cerebral Lesion.—Mr. Stephen Paget: A case of Suppuration in a Chronic Gouty Knee-joint.—Mr. Spencer Watson: A case of Intra-capsular Impacted Fracture of the Neck of the Femur, with specimen. Living Specimens:—Mr. Clutton: Case of Osteitis Deformans in a Female, with Lengthening of some of the Bones.—Dr. Percy Kidd: Case of Rheumatic Nodules in an Old Woman.—Mr. Sydney Jones: (1) Case of Extirpation of Uterus for Fibroid, recovery (and the specimen); (2) A case of Tumour of the Bladder removed by Supra-pubic Operation (and the tumour).
ROYAL INSTITUTION.—9 P.M. Prof. J. S. Burdon Sanderson: Some Electrical Fishes.

Saturday, May 14.

MIDDLESEX HOSPITAL.—Operations, 2 P.M.
ROYAL INSTITUTION.—3 P.M. Prof John W. Hales: Victorian literature.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 5th, 1887.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Max. Temp. Shade.	Min. Temp	Rain fall.	Remarks at 8.30 A.M.
Apl. 29	29·90	N.	42	40	73	49	39	·25	Overcast
,, 30	29·10	N.E.	46	42	97	55	41	...	Cloudy
May 1	30·14	N.E.	49	44	99	55	38	...	Cloudy
,, 2	29·75	E.	44	43	...	49	42	·11	Raining
,, 3	29·60	E.	49	49	71	57	42	·06	Raining
,, 4	29·59	W.	56	47	76	54	45	·29	Cloudy
,, 5	29·77	N.W.	51	48	74	59	47	·02	Overcast

Notes, Short Comments, & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news-paragraphs should be marked and addressed to the Sub-Editor.

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "to the Publisher."*

We cannot undertake to return MSS. not used.

RAVAGES OF WILD ANIMALS AND SNAKES IN BENGAL.

THE total number of persons killed by wild animals and venomous snakes in the ten divisions of Bengal during the official year 1885-86 was the highest in the last five years, and amounted to 11,823. As is usual, nine-tenths of these deaths were caused by snakes. But of 12,223 buffaloes, oxen, horses, and ponies destroyed in this manner, only 311 were killed by snakes. These annual returns do not take account of sheep, goats, pigs, and monkeys, the destruction of which is very large. Passing over the most formidable wild animals, it appears that 548 persons were killed by jackals, 221 by crocodiles or alligators, 84 by pigs, and 22 by elephants—whether wild or domesticated is not stated,—12 by buffaloes and oxen, 1 by a horse, 1 by a deer, and 3 by musk rats, the bite of the latter having been followed by mortification. Only 18 deaths were put down to mad dogs, which is regarded as a manifest understatement. Not a single death was caused by wild animals in the town and suburbs of Calcutta, but 13 persons died from snake-bite. The total amount of 29,884 rupees was paid for the destruction of wild animals and venomous snakes, as compared with 42,374 rupees in the preceding year.

H. M.—Our correspondent should consult the Medical Register; but we doubt in any event if he has a legal remedy.

Mr. J. H. Sykes is referred to a general notice at the head of this column.

STROPHANTHUS.

To the Editors of THE LANCET.

SIRS,—At this time, when Professor Fraser's elaborate experiments with strophanthus are bringing it to the fore in therapeutics, it is interesting to note that Dr. Livingstone, in the account of his 1863 expedition up the Shiré branch of the Zambesi river, mentions that Dr. Kirk, who accompanied the expedition, owing to carrying his tooth-brush in the same pocket with some of the kombi, or arrow poison used by the Ajawa and Manganja tribes, accidentally experimented on himself, and "though the quantity was small, it immediately showed its power by lowering the pulse, which at the time had been raised by a cold, and next day he was perfectly restored," and remarks that "it is possible that the kombi may turn out a valuable remedy." This case points to its value as a febrifuge.

I am, Sirs, yours faithfully,

Clifton, May 2nd, 1887. CLEMENTS HAILES, M.D., C.M.

KENNEDY DEFENCE FUND.

THE honorary secretaries beg to acknowledge the following contributions to the above fund, which is being raised to pay the legal expenses incurred in refuting a cruel and groundless charge, particulars of which will be found in an advertisement in the present number of THE LANCET. The committee invite the co-operation of all members of the profession in promoting the defence fund, and request that subscriptions be forwarded to the honorary treasurer, Dr. M'Veagh, 1, Rutland-square East, Dublin.

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Mr. J. de Courcy Young (Bruthen).—We do not see how we can help our correspondent.

Beta.—The course of action is quite legal, but very unwise.

"INHALATION OF COAL-GAS AS A SOURCE OF DISEASE."

To the Editors of THE LANCET.

SIRS,—Attention has been lately called to the deleterious effects produced on the human body by the inhalations of coal-gas in small quantities. The public, equally with the medical profession, are aware of the dangers to health resulting from the presence in respired air of this gas in sufficient volume to be appreciated by the sense of smell. How great is the sum of ill-health produced by this necessity of our civilisation is perhaps hardly realised, both on account of the insidiousness of the symptoms and the association of them often to causes other than the right one. In an introduction to "Our Homes," entitled "Health in the Home," written by Dr. Richardson, he tells how he himself suffered from symptoms due to the adulteration of the air of his library by carbonic oxide derived from the escape of coal-gas from faulty pipes in minute but toxic quantity. Nausea, giddiness, coldness of the body, and inaptitude for work led him at first to suspect stomach derangement. Noting, however, the similarity of the symptoms with those produced previously on himself while experimenting with carbonic oxide, he was led at last to the real source of the mischief. I remember soon after this article was published meeting a medical man who complained to me of drowsiness and giddiness, combined with coldness of the extremities and this same inaptitude for exertion. His digestion was excellent, his frame robust, and he was becoming seriously alarmed at what he thought might be indications of cerebral mischief. I told him that I felt sure he was suffering from carbonic oxide poisoning, and, to add weight to my words, gave him Dr. Richardson's article to read. Then the secret came out. His symptoms were always aggravated during the evening, after he had been sitting for some time in his dining-room, and his wife had also of late shown a drowsiness which was foreign to her habit. In this room a short time previously an indiarubber pipe had been fitted to the gaselier, to bring the gas down to a water-heating apparatus on the table, which was always used at this time of the day. The symptoms dated from the time of this fixture, and the connexion in my mind between the two things was complete. The diagnosis was rendered certain by my friend, who at once did away with the apparatus, telling me a few days afterwards that all unpleasant symptoms had passed away, and that he had never felt better in his life. This pertinent incident may help to call the attention of your readers still more to a source of danger to health which I have long felt to be as common as it is often unsuspected.—I am, Sirs, yours faithfully,

H. M. ELLIS, Staff Surgeon, R.N.

H.M.S. *Valorous*, Devonport, May 2nd, 1887.

Juvenis should write to the Secretary of the College, who will doubtless afford the information required.

BROWN DEFENCE FUND.

To the Editors of THE LANCET.

SIRS,—Kindly permit me to acknowledge the following:—Amounts previously received, £13 1s. 6d. Dr. J. Brevard Neal, 10s. 6d.; Dr. M. A. Ward (Dublin), £1 1s.; R. H. A. Hunter, Esq., £1 1s.; Messrs. Roby and Roby, £1 1s. I am, Sirs, yours faithfully,

G. STANLEY MURRAY.

Meadow Side, 23, Upper Richmond-road, Putney, May 4th.

THE CLIMATE OF COLORADO.

IN reference to an inquiry recently inserted in our columns, Mr. T. Laffan of Cashel sends us a letter, from which we make the following extract:—"I must say, from experience and a long residence in Colorado and the adjoining territories, that the climate is unsurpassed. To those suffering from incipient consumption, by proper attention to exercise, such as hunting, fishing, &c., there is no question but in a short time all traces of the disease will disappear. I have known young men who went there eight or nine years ago as hopeless invalids, and after a few months' sojourn returned to their eastern homes rugged and robust men. Those far advanced in consumption will have a hard time of it as regards breathing, owing to the extreme lightness of the atmosphere. For such the equable temperature of New Mexico is more suitable. As a resort I would recommend the San Louis Park; it is a beautiful valley, extending several hundred miles, running north and south from Del Norte Col to Santa Fé, New Mexico, and over twenty miles wide, between the Sangré De Christo and Conejos ranges of the Rockies, with an average of about 4000 ft. elevation by sea-level. Game abounds, and fishing in the Rio Grande river, which runs through the valley, is excellent. The winters are not quite so rigorous as in the mountains. I have seen men in that country who were so emaciated physically that their life was not worth a cent. Profuse expectoration appeared to trouble them most. In a short time they became hale and hearty. Persons in an advanced state or period of the disease suffer much; they even bleed from the nose and mouth on the least exertion. This is owing to the high altitude and light air. But the Mexican people say that by drinking tea made from the mild mountain sage all traces of the disease are eradicated; and no Mexican is troubled with consumption that is to be attributed to climatic influences."

Cyclops.—We consider the charges very reasonable. The legal profession would not consider itself remunerated on any such terms. Our correspondent would do well, however, to base his charges entirely on professional attendance, throwing medicine in, or charging little more than cost price.

Q.—A very full exposition of the subject of coma was published in the number of *Brain* for January last, from the pen of Dr. Mercier—an article which is well worthy of perusal.

P. W. should consult his medical attendant. We do not prescribe.

"SIMILIA SIMILIBUS CURANTUR."

To the Editors of THE LANCET.

SIRS,—Sin that I han ben ylogged in Hades mo than four hundred yeres, I pray you to be patient wid me, thanne wol I tell ye sikerly that which doth wirry me moche. Certes, ther is a very parfite practisour, ycleped Doctour Lauder Brunton, wel versed in ye causes of everich maladie and the werking of dragges. Ike hath he shewed you that ye conseils of Homœopathy be alway ful of errour, inasmuchel as they weren enforced whilom by the auctoritee of a persone, hight Hahnemanne. Douteles ther ne hath ben naught neue under the Sonne; but I n'am not desirous for to teche yonge men of hir practike. I wold only say that phisiciens at my daye wer used to sayn, "right as maladies ben cured by hir contraries, right so shal man warishe werre," the which wordes I han writ in ye Tale of Melibee, as you mote se for yourselven, if it so be that ye han gotten my werkes. Touching my letter, I beseke you of youre good will, for iche n'am not mochel used to dite letters sin I han ben here; and the postes gon selden time here abouten.

Youre servant in alle humblesse,

GEOFFREY CHAUCER
His Gost.

C. T.—The answer must be uncertain. The body named will only be able to grant a registrable qualification, *after the date mentioned*, in the event of other bodies combining with it, or the Medical Council appointing examiners in surgery.

Mr. T. B. Gibbs will find the method described in THE LANCET of April 16th last.

A. R. W.—The book mentioned is perhaps the best for the purpose.

OBSCURE NERVOUS AFFECTION.—OBESITY.

To the Editors of THE LANCET.

SIRS,—In reply to two correspondents in your last issue, one signing himself "Puzzled" and the other "Subscriber," I would suggest a trial of massage in both the cases to which they respectively refer. The neuropathic condition developed by the patient of the former would, in my opinion, judging especially from the history of the case, be much benefited, if not entirely cured, by such a process; and with regard to obesity, as referred to by the latter, one case has lately been brought under my notice in which under a course of massage the patient lost seven inches round the hips and five inches and a half round the waist in three weeks.—I am, Sirs, yours faithfully,

R. A. DOUGLAS LITHGOW, LL.D., M.R.C.P.Ed., &c.

Lowndes-street, S.W., May 3rd, 1887.

A GIANT AMONG GIANTS.

THERE are giants and giants. There are even giants among giants; and we venture to say that the Austrian giant now to be seen in London is one of these. He is most phenomenally tall. Though twenty-two years old he is thought to be still growing, and has certainly grown an inch or more in the last nine months. He has three sisters and one brother. Neither in them nor in his family has there been any instance of undue height. It is said that he was not unusually tall until the age of fourteen, when he began to shoot upwards.

Etiquette.—The rule mentioned cannot be always applied. The special circumstances of the case must be taken into consideration, or injustice may unwittingly be inflicted.

M. W.—Only graduates of universities are entitled to the prefix.

"DANGERS OF SWING-BOATS."

To the Editors of THE LANCET.

SIRS,—In Leicestershire a similar case to that recorded in your last issue came under my care last autumn, a young child having been struck on the left side of the forehead by an iron screw-nut on the bottom of a swing-boat. A portion of the frontal bone, about an inch long, was firmly fixed into the base of the skull, and two portions of convolutions were mingled with the débris. Unsuccessful efforts under chloroform were made to extract the bone, and the whole treated with a weak solution of perchloride of mercury. The child lived fifty hours, and until two hours before death, in spite of the gravity of the injury, there was neither severe haemorrhage, paralysis, unnatural pupil, loss of speech, nor vomiting. Death was preceded by strabismus, convulsions, and syncope. I am, Sirs, yours obediently,

Skipton-in-Craven, May 2nd, 1887. C. W. SESSIONS BARRETT, M.B.

ERRATUM.—In Dr. Nesfield's letter published last week, page 904, the date of the premature labour was inaccurately given as Oct. 5th. It should have been Dec. 5th.

COMMUNICATIONS not noticed in our present number will receive attention in our next.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Harkin, Belfast; Dr. De Watteville, London; Dr. Bristowe; Sir W. Mac Cormac, London; Dr. Hollis, Brighton; Dr. Fothergill, London; Mr. Lawson Tait, Birmingham; Dr. G. Macdonald, London; Mr. Edmund Owen, London; Dr. Cheadle, London; Mr. J. Startin, London; Mr. Simeon Snell, Sheffield; Mr. Tempest Anderson, York; Dr. Weaver, Southport; Mr. J. Oliver, London; Mr. Graham, London; Mr. Marmaduke Sheild, London; Dr. Sadler, Barnsley; Mr. C. B. Lockwood, London; Dr. C. R. Saunders; Mr. S. L. Bapty, Manchester; Mr. J. de Courcy Young, Gipp's Land; Dr. L. W. Marshall, Nottingham; Dr. Peter Hood, London; Dr. D. Drummond, Newcastle-on-Tyne; Mr. Mayo Collier, London; Mr. H. W. Roberts, Lewisham; Messrs. Brady and Martin, Newcastle-on-Tyne; Mr. A. F. Mickle, London; Mr. Walker, Spondon; Mr. Barraud, London; Mr. Billson; Mr. C. H. Robinson, Dublin; Mr. T. D. Pryce, Nottingham; Mr. Waugh; Dr. Blackman, Portsmouth; Dr. Moll, Berlin; Mr. Page, London; Dr. R. P. Harris, Philadelphia; Mr. Tyrer, London; Mr. Murray; Messrs. Shelley and Co., London; Mr. P. D'E. Wheeler, Jerusalem; Mr. Manby, East Rudham; Mr. Laffan, Cashel; Mr. Best, Cheltenham; Mr. Stretton, Kidderminster; Mr. Kelly, Inniscorthy; Mr. J. B. Clarkson, Boston, U.S.A.; Dr. C. F. Knight, Dublin; Mr. Lynd, London; Mr. C. B. Lockwood, London; Mr. T. G. Horder, Cardiff; Messrs. Hopkinson and Co., Notts; Mr. W. North, London; Mr. Todd, Dublin; Mr. A. S. Morton, London; Dr. Lithgow, London; Messrs. Oppenheimer and Co., London; Dr. McBride, Philadelphia; Mr. Wilkinson, Melton Mowbray; Dr. T. S. Smith, Sittingbourne; Messrs. Maclachlan and Co., Edinburgh; Mr. Leiterschofen, Homburg; Miss Barlow, Colwyn Bay; Mr. Matthews, Bickley; Dr. C. Hailes, Clifton; Mr. Hall, New York; Mr. East, Lincoln; Mr. Blake, Dublin; Messrs. Reid and Co., Bristol; Mrs. Brebner, Kensington; Mr. Dawson, Forest Gate; Dr. McGregor, Aberdeen; Mr. Bourne, Coventry; Mr. Firkins, Redwich; Mr. Woodhead, Huddersfield; Dr. Hassell; Messrs. Cowan and Co., Perth; Messrs. Johnstone, Edinburgh; Mr. McCarthy, Liverpool; Mr. Bottwood, Ipswich; Mr. Forster, Leicester; Mr. Ashenden, London; Mr. Christison, Stonehaven; Dr. B. Squire, London; Mr. T. Cooke, London; Mr. Hume, Edinburgh; Dr. Read; Messrs. Lumley, Piccadilly; Mr. Moullin, London; Mr. Aston, Barnetty; Mr. Owen, Teignmouth; Mr. Eastwood, Blackburn; Dr. Thurnan, Highgate; Dr. Wood, Pontypridd; Mr. Cornish, Manchester; Dr. Duggan, Castle Eden; Dr. Knight, Dublin; Dr. Colley, London; Dr. Macdonald, Cork; Mr. Sacker, London; Mr. Hill, London; Mr. Marks; Dr. Jacobs, Dublin; Mr. Burnett, Liverpool; Dr. Bahadhurp, Berlin; Mr. Steat, London; Mr. Stewart, London; Mr. Carter, Liverpool; Miss Meyer, Holloway; Mr. Hunter, Lowestoft; Mr. Sessions Barrett, Skipton; Mr. C. J. Bond, Leicester; Alpha, Birmingham; A Reader; C. T.; H. M.; A. R. W.; Secretary, Liverpool; Medicus, Kensington; Superintendent; C. X., London; M.A.Cantab.; M. G. R.; H. A. C.

LETTERS, *each with enclosure*, are also acknowledged from—Dr. Seaton, Sunbury; Miss Garrett, Winchester; Mr. Allen, Dulwich; Mr. Todd, Carlisle; Mr. Bottomley, Ashton-under-Lyne; Messrs. Bromley and Co., Lincoln; Mr. Godfrey, Northampton; Mr. Davison; Mr. Marsh, Wigan; Mr. Macadam, Glasgow; Mr. Moring, London; Mr. Dawson, Leeds; Mr. Walker, Durham; Mr. Hughes, Barry; Mr. Huish, Forest Hill; Dr. Milne, Accrington; Mr. Müller, London; Mr. Jessop, Great Grimsby; Dr. Webber, Crewkerne; Mr. Ryan, London; Messrs. Gale and Co., London; Mr. Beaman, Newton-le-Willows; Messrs. Wyley and Co., Coventry; Mr. Rubenstein, Liverpool; Mr. Nuttman, Great Yarmouth; Mr. Worsley, Ryde; Mr. Parry, Bagillt; Messrs. Wilson and Co., Ipswich; Mr. Dumville, St. Albans; Mr. Crasweller, Highbury; Mr. Hodgson, London; Mr. Mills, Rochdale; Messrs. Giles and Co., Clifton; Mr. Branthwaite, Twickenham; Dr. Mayo, Great Yarmouth; Mr. Reid, Seacombe; Mr. Taylor, Leicester; Mr. Beach, London; Mr. Beddoe, Hereford; Mr. Lindsay, Belfast; Mr. Leeman, Inverness; Mr. Whittaker, Derby; Mr. Telford, Bury; Mr. Grimsley, St. Asaph; Mr. Lang, London; Mr. Allen, Dulwich; Messrs. Bullock and Co., London; Mr. Woodward, Highbury; Messrs. Mottershead and Co., Manchester; Mr. St. Dalmas, Leicester; Mr. Ware, South Kensington; Mr. Stallard, Worcester; Mr. Baird, Bradford; Mr. Davis, Worcester; Mr. Hine, Kennington; Mr. Linney, Hitchin; Mr. Joslen, Workington; Miss Harrison, Stafford; Mr. Wharry, Scarborough; Mr. Hendry, Eastbourne; Mr. Hume, Edinburgh; Messrs. Bell and Bradfute, Edinburgh; Mr. Marquis, Dundee; Mrs. Turrell, Hertford; Mrs. Spreat, London; Mr. Leggatt, Woodgreen; J., Brixton; Alpha, Manchester; Secretary, Glasgow; Alpha, Stratford; M.D., Horncastle; Meredith, York; D. M.; Medicus, Uppingham; Alpha, Manchester; H. C. S., Beverley; P.; Medicus, West Kensington; D., Edgbaston; G. B., Hampstead; Z. Y. X.; M. Z.; Ozone; Alpha, Bourne; K., Camden-town; Immediate, Hanwell.

Midland Times, East London Courier, Stratford Express, Imperial Federation, Caslon's Circular, Essex Telegraph, Western Mail, Daily Ipswich Journal, Eastern Daily Press, Exeter Evening Post, Oswestry Advertiser, Southport Visitor, South Wales Daily News, &c., have been received.

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Agent for the Advertising Department in France—J. ASTIER, 66, Rue Caumartin, Paris.